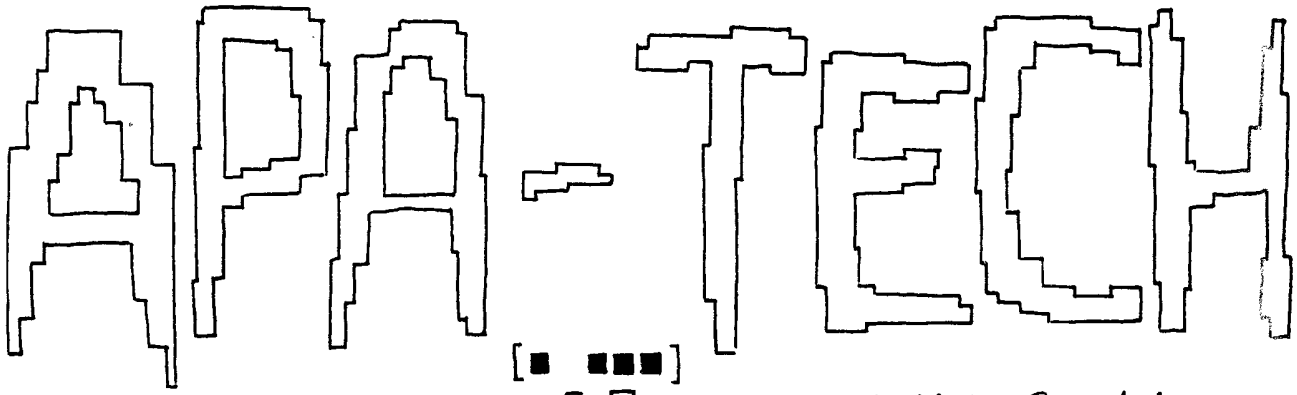
APA-TECH 23



IN THE FUTURE...

CARTOONS will be transmitted by **TELEPHONE!**



... the Amateur Press Association
for and by the members of G

[■ ■■■]

23

February 1983

G.T. Buckfast = Renee Sieber
Shalmaneser = Greg Ruffa

The 555 Times #23

Table of Contents

Cover / Bill Higgins, Barry Gehm, Greg Ruffa (through the miracle of modern telecommunications!)	1
The 555 Times #23 / Shalmaneser	2
A Foolish Consistency / Jamie Hanrahan	9
Poor but Happy / Donna Struwe	6
The Quintessential Singularity #21 / Greg Ruffa	16
Rabbit Runes / John Frambach	2
True Confusions / Barry Gehm, Bill Higgins, Alice Insley, John Nine, Greg Ruffa	2
My Job, and Welcome to It / Bill Leininger	4
The Quintessential Singularity #22 / Greg Ruffa	6
Third Time's a Charm / Keith Thorne	4
Millions for Hardware, but Not One Cent for Programmers / Rolf Wilson	2
total:	54 pages



The next deadline is Sunday, April 10th in Kalamazoo.
The required number of copies is 30; the minimum required level of contribution is two pages every other issue.

Some of you need to get with it! You know who you are...

the roster

Mike Bentley (3) - 10 Village Trail, Honeoye Falls, NY 14472

Jerry Corrigan (35) - 1304 Turtle Creek Dr., Apt. E, Palatine, Ill. 60067 (312)-934-1243

Al Duester (38) - 179 Woods Hole Rd., Falmouth, Mass. 02540 (617)-540-3250

Clif Flynt (40) - 6564 Michigan, Saline, Mich. 48176 (313)-429-1265

John Frambach (39) - Rt. 1, Box 339B, Sawyer, Mich. 49125

Gail Hanrahan (41) - 18225 Kingsdale Ave., Apt. 208, Redondo Beach, Calif. 90278
(213)-542-9098

Jamie Hanrahan (18) - ditto!

Bill Higgins (17) - 853 Lorlyn Dr., #1A, West Chicago, Ill. 60185 (312)-293-1050

Valli Hoski (13) - 710 S. Scoville, Oak Park, Ill. 60304 (312)-DUFF-VMH

Bill Leininger (21) - 15 S. Maple Lane, Prospect Heights, Ill. 60070 (312)-398-7742

Dave Levine (26) - 6926 Millbrook, Apt. 203, St. Louis, Mo. 63130 (314)-727-2571

Bill Roper (27) - 918 Main St., #1, Evanston, Ill. 60202 (312)-328-9473

Greg Ruffa (11) - RR 1, Box 390, Apt. 5, Hamburg, N.J. 07419 (201)-827-6111

Mike Sestak (2) - P.O. Box 1866, Ft. Collins, Colo. 80522 (303)-224-3863

Renee Sieber (4) - 525 W. Walnut St., Kalamazoo, Mich. 49007 (616)-344-1183

Dick Smith (6) - 710 S. Scoville, Oak Park, Ill. 60304 (312)-DUF-FUND

Rod Smith (7) - 922 Belvoir Dr., Frankfort, Ky. 40601 (502)-223-2119

Donna Struwe (19) - 530 W. Walnut St., Kalamazoo, Mich. 49007 (616)-342-4967

Keith Thorne (1) - 632 N.E. Adams St., Apt. 2, Minneapolis, Minn. 55413
(612)-623-4855

Rolf Wilson (28) - 302 Kenwood, #232, Champaign, Ill. 61821 (217)-352-3840



a message:

THIS IS BEING DISTRIBUTED AT CHICAGOTHURSDAYNIGHT BEFORE CAPRICON, JUST SEVEN DAYS AFTER DEADLINE.

YOU SEE... WE CAN DO IT.

♡!, Shal

A FOOLISH CONSISTENCY

special back-from-the-deathlist issue -- for Apa-Tech #23

Jamie Hanrahan, 18225 Kingsdale Ave #208, Redondo Beach CA 90278, 213-542-9098

Well, gee. What can I say? Renee has been generous; I should've been listed as "dropped" in #22, instead of as "about to be dropped", since my last contrib was to #19. But I suppose that with the roster as small as it is I'll be re-instated immediately any way.

Which attitude is, of course, absolutely deadly to apas. But judging by the shrinking A-T mailings I've been receiving, I am not the only one so afflicted. What is it, I wonder? Did those three or four very-late mailings make everyone lose interest? Or is it that there haven't been very many good ~~fights~~ discussions going? Or is everyone simply going through a not-doing-much-writing phase at the same time?

With me, it's a combination of the latter two. I read everything everybody writes here, but for some time I haven't seen much to make intelligent comments on, and doing a whole disty worth of mc's that say little more than RAEBNC is not really appealing to me -- especially when I have so many other projects upon which to spend my (as Tom Lehrer put it) Copious Free Time. And I haven't had much to write about myself; the few creative urges I've had of late weren't inclined toward the writing of techish or fannish essays.

Even so, I should be able to fill two pages every four months... or so one would think. I can't go along with requests to lower the minac. Heck, that averages one page every sixty days, or about a line a day... of course we all know it doesn't work that way; you can't reasonably do an apazine by adding one or two lines to it every day, and because of the two-direction mailing delay and the time it takes to go out and get the thing copied after you've written it (or even do it at work) cuts the time available to actually write to about five weeks per mailing. Still, two pages in ten weeks doesn't sound like too high an expectation to me, even though I haven't written anything for the apa in four months... well, I said that being consistent was foolish!

MAILING COMMENTS ON PAST ISSUES

Now, I am truly sorry, ego-scanners [ego-scanners live in vain?], but I am not going to go back and do a full set of mc's on every issue that I've missed. It would take too long, and besides, I don't imagine many people would be interested anyway. (Is there anyone in apa-dom who only reads comments on his or her own zines? Doubt it.) You can assume RAEBNC for any zines I don't mention.

*** MC's on A-T 22 ***

TRANSPORTER TOPICS: The Honeywell CP8 sounds interesting, but if all the chip is carrying is a coded ID number, it seems like overkill. Why is it more cost-effective to make such cards than to punch a few holes in a plain plastic card? I imagine that the reader would be cheaper and more reliable than for punched cards, and much cheaper and much more reliable than for magnetic-stripe cards, but still... I have heard of plans for actually maintaining your account balance on a chip-on-a-card; are they looking at that as well?

(ct Rod Smith, contd.) Is fandom a religion? Or is religion a fandom? Actually, I think the parallels you observe are just a case of similar holes being filled by similar pegs. You can find the same parallels in bowling leagues, ham radio clubs, and etc. However, I must point out than fan publishing is not very common outside of sf fandom. Sure, churches (and bowling leagues, and ham radio clubs) have their own bulletins, written and published by the members -- but how many of those people publish their own, personal zines?

AL DUESTER: On electronic mail -- I'll be sending you copies of articles describing UUCP, a dial-up network of Unix systems. It's relevant because there's nothing about the system that's tied to Unix. If you write a program that will look like a UUCP node to the outside world, but runs on a CP/M system, it'll be a sure seller. On a related note, the Hayes Smartmodem 1200 is a good gadget, but there is another unit by Universal Data Systems that does all the same stuff for $100 less. It also comes with a two-year warranty.

Re ct me, never did receive the album list. But, then, you haven't received ours, 'cause we've not sent one yet, so can't complain...

ROLF WILSON: Loved the future interview. Hope it all works out that way...

DONNA STRUWE: I tend to agree with Renee on the deadline issue. Certainly, in an ideal world, the TOC would be written and the apa collated the day after the deadline. In fact, one cannot always reserve the 11th of every other month for such things. If some zines come in between the deadline and the actual time of collation, what's the harm in including them? Electing an editor twice a year would be cumbersome at best; each editor's three issues would have to deal with the upcoming election... a rotating editorship, shared by whoever volunteers, would be much less trouble. (Are you volunteering?)

Drywall: I once helped cover a room with drywall. Never again. You never saw so many mismatached edges and misplaced outlet- and switch-holes in your life. ("But I measured it...!") But when it has to be done...

JOHN FRAMBACH: Thank you for printing the data on photographing LED's; it'll be useful. I hope.

*** MC's on A-T 21 ***

ROD SMITH (now, why did I use your zine title last time, and people's names for all my other comments? Oh, well): Re ct me, I don't think there's an IR wavelength at which metallized fabrics wouldn't be highly reflective. Even at that, the other problems I outlined remain. I'm not saying for a minute that you couldn't build a portable laser weapon if you wanted to badly enough. But since the same effort would build thousands of conventional guns, each much more effective, much lighter, and much more reliable than the lasergun, why would you want to?

Classics of technology: The Army actually had planned to replace the Colt .45 "automatic" in early '82 -- that is, the plans were discussed at length on the news then; the actual phase-out would have taken many years. The new military sidearm was to have been a "small machine pistol", probably meaning the Ingram M11 (or MAC-11), which is just as reliable as the Colt and has much more firepower. The plans were dropped in light of Reagan's budget-cutting; they were afraid that the change would have been seen as too extravagant.

(ct Rod Smith, cond.) As I understood it at the time, no new Colts have been made for something like five years... actually it doesn't matter much what the "service sidearm" is, as it's intended primarily as a badge of authority and not as a combat weapon.

CLIF FLYNT: Everybody's life is run by coincidence and happenstance, not careful plans. That wonderful bit of advice from the Hitchhiker's Guide, "Expect the unexpected", comes to mind. Taken seriously, that translates to: Be prepared to take advantage of opportunities, and don't be afraid to make a sudden change. For instance, I certainly never thought I'd ever teach for a living (or even for free). But I got this job offer, see, and after much agonizing decided to take it. Now I find that I love the work, and most of my students seem to be satisfied with what I'm doing [he said, modestly].

DONNA STRUWE: Re ct Gail, I've found that my ancient Heathkit RF Signal Generator, with output going to an indoor FM antenna, makes an excellent jammer for the FM bands. So now I no longer have to try to persuade the neighbors to turn off their stereo; I turn it off for them -- provided they're listening to FM, which is usually true. The next step is to add a varactor diode FM modulator so I can talk to them ("If you'll turn this down, we'll let you listen to it") or substitute classical or jazz for their disco or punk rock! Thank Maxwell for the capture effect...

Re ct me, I stand pat on my opinion on The Warlock Unlocked. Rod didn't have time to appreciate his discovery. The turning point you describe would be in the opening chapters of the next book, if there is one. Also, I don't believe it was established that Rod would retain those powers back in "his" universe.

Re ct Doug Van Dorn, that movie is going to be called Return of the Jedi.

VALLI HOSKI: Thank you for your opening comments on Chicon. Lovely. Your experience of growing out of one circle of friends, only to find a new one, is not uncommon. Most of the people I know in San Diego are in the "formerly-very-close-friend" category, not through any fault of mine or theirs, but just because we've grown apart. For many of us it's very hard to let go of our first fannish "group" (I want to say "clique" there, but without the negative connotations), because it was the first such group in which we ever felt accepted. Unfortunately, one does not always find a new group to merge into at the same time that one is migrating out of the old group. Right? Anyway, may you always find a place where you feel at home. More on Worldcon later. I can make several suggestions for a dress-up dinner at LAcon... I think. The Anaheim area is not a great one for great restaurants.

HIGGINS: (Why does everyone else get a first name, and you not? Why didn't Donna get the second line indented? Who the Hell cares anyway?) Re Star Wars saturation, see my comments on Chicon later on. Liked the discussion on the economic feasibility of starprobes -- have you considered polishing it and submitting it to Analog? They've published similar things, and Apa-Tech doesn't constitute prior publication, you know.

Re ct Greg on CB w/car convoys -- it could be enjoyable and useful, but there are, in general, too many CB'ers out there. I do wish there was a truly short-range radio system that could be used to communicate easily with other drivers; it might -- just might -- result in fewer accidents. But the CB channels are far too crowded for practical use until you get well away from the cities.

RENEE: Re cost of catering -- I don't know exactly how much each individual item of our wedding cost, but it was a small wedding and the catering bill couldn't have been that bad. Gail's parents and older sister made all those arrangements, God bless 'em! Was your caterer based in Chicago? If so, that probably made the bill at least 50% higher than it would've been in a smallish town like Kazoo... What we saw of the party was must enjoyable; thank you!

MISHA: *Why* should everyone do at least one hand-wrought zine? Typos in handwriting? The same thing happens to me while writing on the board. I'm frequently thinking ahead, talking, and writing at the same time, and sometimes (no, often!) I skip a letter, or begin to write one of the words I just spoke instead of what I wanted to write, etc. But it doesn't seem to bother the studii. (The only thing about my boardwriting that does bother them is that I frequently change hands! No great trick, as you don't need nearly as much control as you do with a pen or pencil, but few people seem to know that.)

Do you know that that Garb person has not deigned to visit us or call once since he got here?!? Well, I take that back. He called me at work once, when he first arrived, then nothing... I hear he's still staying with someone else, looking for a reasonably-priced place to live. He'll have a long search in LA!

*** MC's on A-T 20 ***

JERRY CORRIGAN: Couldn't agree more on over-designed gadgets, and household appliances in particular. But you missed a point; designers not only neglect ease of use, but also desireability, when adding functions. Witness the Zenith TV sets with the built-in telephones. Interestingly, I once read a book on logic design using MSI and LSI -- the exact title escapes me, but that's pretty close -- which addressed this issue. One of the bad examples the author used was a uP-controlled microwave oven...

DICK SMITH: Re E.T. -- I won't quite say that I hated it, but I came close. I admit that I went into it expecting to find things not to like. I never dreamed that finding such things would be so easy. The review by Baird Searles in a recent F&SF sums up my feelings about the film. I also must disagree with your opinion that it's a "very fine children's movie"; I think it's a terrible children's movie. It teaches kids to be distrustful of their parents, their teachers, doctors, the police, and even the space program (notice the shuttle insignia on the pressure suits?). Well, kids shouldn't be taught to trust people implicitly, but teaching them to distrust implicitly isn't right either.

HIGGINS: If only we'd known about Lower Michigan, we'd have saved ourselves four or five blocks of walking in a pouring rain...

ROLF WILSON: Belated congratulations on your happy wedding. How's the story-keyword project coming? The idea has already been proven in other contexts; many professional journals these days (including, of course, Communications of the ACM) come up with a "keyword list" for each article. There are a number of firms that offer a search service which lets you find articles by combinations of keywords. There was a writeup in a recent Science News... just be sure to allow for a large number of keywords for each story, and remember that each "keyword" might be a relatively long phrase, but that searches should succeed even if they only match a part of the phrase. When someone is searching for a story, it's better to come up with a long list of "possibles" (and narrow it down from there) than to be too conservative and not find the story the person wants.

(ct Rolf Wilson, contd.) Also remember to include possible synonyms -- for instance, if The Moon is a Harsh Mistress has "magnetic catapult" as one of its keywords, and some techie [a purely hypothetical example, of course; what techie could forget that particular title?] asks for a novel that involved a "mass driver", a simplistic system won't find TMiaHM.

* * *

Is there any point in doing mc's on #19, considering that it came out over six months ago? I thought not. On to other things.

* * *

CHICON RETROSPECT

Gail and I had a positively wonderful time at Worldcon -- thanks in no small part to GT. But the week was not without its low points. For one thing, I wish the airline fare structure wasn't so friendly to seven-day trips; we were both homesick after four or five days. Neither of us has ever been bothered that way before, but neither of us has ever been so happy at home before... And I think, too, that we had both been looking forward to the con for so long that it couldn't possibly have lived up to our expectations, no matter what happened.

We also, I think, depended a bit too much on some of you people for guide service. (Gak! We'll see the other side of that in '84...HELP!) Thanks especially to: Mike and Alice for walking us to lunch; the crowd at the sushi dinner (let's see: Dick, Valli, Greg, Higgins, and... and... oh, yes, "Australian John Foyster" (thanks, Greg)); Valli for the drive to the S&I museum and for the quick run through Oak Park... and everyone else, for the ambience (for want of a better word). I vaguely remember a very small dead-dog party that included ourselves, Higgins, Keithorne, Greg, and two people from -- Iceland? -- who had brought a really amazing bottle of something or other; a number of pleasant meals-and-chats with various people at Scampi's (doesn't the Hyatt know that it's against regulations to have a reasonably-priced restaurant that serves good food in the hotel?); a somewhat-disappointing outing for pizza (in the first place, we managed to sit ourselves in the middle of a long table, and the people we knew were at one end; in the second place, the pizza we get in California is better! Nyah!); Alex's "wake"; fast-food-Chinese dinner with Jeff and Carol, and an absolutely silly walk back to the hotel therefrom...

A great time we had. But it would have been a bit better if it had been a bit shorter. Seven days is a long time to live out of a suitcase.

We're also going to have to revise our priorities a bit when it comes to travel times. Due to route cut-backs, the best night flight we could find got us into O'Hare at 6 AM local time. The Continental bus doesn't get closer than about six blocks to the Hyatt that early in the morning, which distance we had to walk, which wouldn't have been so bad except that it was pouring rain by the time we got to the lobby (yes, that morning!)... the rest of the week, though, the weather was gorgeous; in fact, we flew back to California to find the sort of weather we'd been warned to expect in Chicago.

Oh, yes: The return flight. You've probably heard this from someone else by now, but we found it uproariously funny that American Airlines should choose to run Star Wars on that particular flight.

We won't be able to make Baltimore, I fear; the IRS is biting us too hard, and we're trying to accumulate a down payment for a house. See you in LA!

MISCELLANEOUS NOTES

SYNERGY COMPLETISTS (such as myself) now have a seventh album to buy -- the soundtrack of The Jupiter Menace. The album is out now, though the movie won't be for a while. I'm afraid that completism (?) is about the only reason for buying it. As with Audion, Fast's technique continues to improve, but his compositions continue to lack inspiration. He seems to have fallen almost completely into the "let's create a strange, ethereal, ~~interminable~~ piece of music" trap, a la Tangerine Dream.

On a happier note, I recently discovered a series of albums called "Fresh Aire n", where n varies from 1 through 4, by a group called the Mannheim Steamroller. Great stuff, mostly involving classical-style compositions with a few modern instruments well-blended in. The discs are expensive, though (around $18 a copy). They're usually found in the "audiophile" section under "American Gramophone".

I was also going to recommend, for those who like piano solos, a series of albums from Windham Hill Records (a very tiny label operating out of Stanford, CA) by George Winston. The music is absolutely glorious, but every one of the discs I've bought has had some really bad defects. The company also sells the same music on cassettes for the same price $8-$9 each); they might be better -- piano solos can stand a bit of extra background hiss a lot better than they can stand an occasional loud SNAP!!! .

Speaking of which, I see that High Fidelity magazine has predicted that the LP record will die within the next ten years. With prerecorded cassettes able to (at least in theory) approach the quality of the average LP, and the new digital Compact Disc (CD) able to far surpass the very best LP, the LP will no longer have a niche into which to fit. CD's have already become very popular in Japan, and will be introduced in the U .S. early this year. The first players will sell for around $1000, but that has to come down, as the videodisc players that use the same technology (laser) can now be found for under $500. The discs themselves will probably stabilize at or below the current prices of audiophile LP's. I can't wait.

SEEN ANY GOOD MOVIES LATELY?

One: An Officer and a Gentleman. I wasn't much impressed with Dark Crystal. It was highly analogous to Tron: As an exhibition of what can be done with Muppets, it was marvelous, but the story was pretty banal. And the characterization of Jem clashed mightily with the intended ambience (you just don't expect the main character in such a story to go around saying things like "This place is weird!"). The writers also had too much trouble deciding whether to take the thing seriously or play it for laughs (Fizgig, the friendly monster, being the worst example); this works in most Muppet productions, but not in an "epic fantasy quest" setting. Try again, gang.

I heard an interview on NPR with one of the people at Lucasfilm, who claimed that the title of the third SW movie would be Return, not Revenge, of the Jedi. We'll see. It wouldn't surprise me if this was another red herring.

...BUT IT BEATS CODING FOR A LIVING

My job at DEC continues to have its good and bad sides. On the good side, I am now up-to-speed on all but one VMS course (Operating System Internals), and almost all of my studii think well of me. I've also been given the system management duties for our two (soon to be three) VAXes. And, I haven't had to do any traveling for over a year (but I'm scheduled to break that run of good luck; I'm doing a course in the Santa Clara office the week of January 31st -- two days away as I type this).

On the bad side, I was told over a year ago that I would be teaching the Internals class by now -- and that isn't something I think of as an additional burden; I think of it as a chance to learn new things (and vastly increase my value, both to DEC and to my next employer). But they've kept me so busy that there's not been time to sit in on an OSI class. This is because the most-knowledgeable VMS instructor at our site transferred, and is now based in Albuquerque, and the second-most-knowledgeable person left DEC completely, leaving me to teach all the high-end courses except OSI. They fly Lee Smith back from NM occasionally to teach an OSI course, but I've invariably been busy with my own classes those weeks...

Also, because of the personnel shortage, everyone at the LA training center has been extremely busy, and so we've had little time to do anything in the way of research and experimentation. It's very hard to continue to give the same courses, week after week, knowing that with just one free week out of five or six you could be expanding your material and doing a much better job... we've hired two new people recently who will ease the load eventually, but they're still getting used to their first courses.

I am getting a chance to expand my language frontiers. In mid-December I did a class called "Programming VMS in VAX-11 Pascal" -- in other words, how to call system routines from Pascal. From this experience I conclude that everyone who has been complaining about what an unworkable language Pascal is is right. The new VMS implementation solves many of the problems, but by no means all.

And, I am told, I'll be doing a course in C soon. Yes, DEC does supply a C compiler for VMS, and it's a damned good one, from what I can tell. I really like the language, and hope that the predictions I've heard of its taking over the systems-programming world come true. (They should add program section control to it, though; without that, it'll never completely replace a good assembler like Macro-32 or Macro-11.)

On a related topic -- last week I accompanied Gail to UniCom, a nationwide conference of Unix users and hackers in San Diego. (DEC gave me the week off, perhaps to try to make up for my trip next week; TRW sent Gail to the conference because she's a systems programmer on a Berkeley Unix system, so I came along to cut our time-apart from two weeks to one and to see what contacts I could make.) Unix in various forms has been ported, I believe, to all of the 16-bit micros (except the TMS9900, but including the National 16032, which sounds like a really nice machine, even better than the 68000) and to a significant number of 16- and 32-bit minis. I don't expect it to be the operating of the future, as there are many things it just can't do well. But it's perfect for character handling and for low-volume file manipulation,

which is exactly what many (if not most) of those machines are being used for. And in many applications where it isn't the best system to use, but can still be made to do the job, the fact that it's becoming a de facto standard, allowing systems to be moved among a wide variety of machines, may well be an overriding concern.

The conference itself was not too impressive. I only saw a few of the sessions, but Gail tells me that the rest were the same: Sales pitches and egoboo-begging. The needs of the Unix community would be better served, I think, by a magazine devoted to them. Come to think of it, I'm surprised there isn't one already.

Hmmm... maybe Gail and I should start one?

I've also been playing with graphics a bit. We have a GIGI (General Image Generator and Interpreter, aka VK100 -- 768 (?!?) x 240 resolution, six colors plus black and white, built-in line-drawing, circle and arc drawing, curve interpolation, area fill, and character generation) terminal on the VAX, and some nice software packages to go with it (a Graphics Editor that lets you play with shapes on the screen the way a full-screen text editor lets you play with text; a Character Set Editor that lets you define your own characters; etc.), and if they ever get the graphics printer that goes with it I'll run some stuff in A-T. (The graphics printer is only black-and-white, but that's a bonus for what I intend to use it for: Making transparencies for my classes. I can write a quick little program that'll display first the red dots, print that, then show the green dots and print that, then same for blue -- then I'll use different-colored transparency film. No color separations to do!) It's mainly intended for just that sort of work, but it can be used in a limited way for dynamic graphics; I'm working on a VMS performance monitor program that will display its findings as a collection of segmented bar graphs.

And DEC has announced support for Unix on the 11's, and will soon announce support of VMUnix (Berekely 4.1) for the VAX, so maybe I can finally bring a Unix system up on the 780 and show people that VMS runs faster...!

I've finally seen one of the long-awaited DEC Personal Computers (the "Rainbow", or PC-100). It wasn't running, but I had a chance to fiddle with the keyboard. I didn't like it. At minimum it will take some getting used to. Dammit, when will people learn that there should be no keys placed where they'll accidentally be struck when you're reaching for the shift or return keys? (The IBM PC is one of the worst I've ever seen in this regard, but the DEC PC keyboard has a few of the same problems, alas.) At least the shift and return keys are still over-sized. Hard enough to have to hit one key precisely; if you need to hit two keys at the same time, the second key should be oversized.

I have no idea where I'll be working or whom I'll be working for in ten years. I hope it'll involve some teachine, some program and system design, and a minimum of coding. (Coding is becoming boring for me. Once I've figured out how I'm going to tackle the problem, I'd much prefer to have someone else do the actual coding, except for a few key pieces. But even if I had people working for me whose sole job was to turn my flowcharts or psuedo-code into Fortran or C, I probably wouldn't be happy with their techniques, and would end up doing it myself anyway...) But who knows?

RANDOMNESS

Other where-will-I-be-in-ten-years ideas: Damned if I know. I'm certain that Gail and I will still be married (thereby confounding all the people who started a betting pool at our wedding, the goal being to predict how long we'd stay together!); and I hope we'll be living in our own home. But where that home will be (we want it to be in San Diego, but we might find another area that we like), and how we'll be paying for it, is anybody's guess. I expect we'll both be doing independent contract work in the computer field, rather than working for one company. But... put it this way: If anyone had told me, ten years ago, that I'd be (1) teaching software classes for (2) the number-two computer manufacturer in the country, I wouldn't have believed it for a second. (Hell, I wouldn't have believed that DEC could ever move up that far!) Where I'll be and what I'll be doing ten years from now will probably be equally unpredictable.

I have one other ten-years-from-now prediction, though: Sometime within the next ten years, a year will go by in which nobody wants to host the Worldcon. On second thought, make that fifteen years.

Talk to you later...

Jamie

"POOR BUT HAPPY"

(or THE RISE OF THE HOUSE OF ISHER #4)

Yes, my children, we have yet another zine for Apa-Tech (number 23 this time) typed out by Dorna Struwe here at 530 W. Walnut St, in that ever growing metropolis of Kalamazoo, Mi. 49007. To speak with me, one need only dial (616) 342-4967. This zine is dedicated to making sure that there is not a large majority of pages in this issue which are contributed by one William Skeffington Higgins. (just for you Bill, I'm trying to make this one long)

***** ***** ***** ***** ***** ***** *****

Mailing comments on A-T #22

555 - For the moment, at least, my proposals stand.//"you shouldn't be thrown out because you are busy with other things and occasionally can't make minac." What is minac for? With that statement, it seems as though you're eliminating the minac rule. I personally think people shouldn't be thrown out if they don't make minac, simply because the apa can't afford to lose any members, even those who contribute sporadically. But if you actually start that, the minac will be ignored. So which statement is the "official" statement of the chair - that we should keep minac as it is to try to come up with a reasonable size distribution, or that people won't be thrown out even if they don't make minac. We can't have it both ways, nice as that would be, so which is it?

Transporter Topics - You left instructions for your D & D game at the party - do you want me to send them to you? (assuming I can still find them by the time I get your answer.//If fandom is a religion, what, or who, do we worship?

Down to the Sea - Re your techie/fannish database - what are we talking in terms of money? Tullio and I are interested, but the state of our finances leaves something to be desired (like money). It's hard to be enthusiastic without many facts to go on, but we are interested.

One Terse - Your con reports look like Valli's without the ellipsis.//Isn't it nice to feel wanted?--without you we'd lose a quater of the apa (I know - it isn't that nice. I'm trying to write more!)

You Are False Data - There's a talking machine at the Jewel by us - Tullio wanted to have everyone go out there and sing "Home on Lagrange" sometime during Ishercon, but we never got around to it.

----- ----- ----- ----- ----- ----- -----

What's Been Happening Since Last We Wrote Section

Windycon weekend - Tullio and I show up at the convention Friday night. We get to talk to some people, Mike Stein gives us back issues of Fantastic Films. We ask Bill Higgins to drive us to my folks house, and he kindly obliges. Saturday Tullio helps my father who is trying to remodel the house. (after we left Kalamazoo we had happy thoughts of not having to work on our house for another three weeks. Little did we know...) Saturday evening we go to the airport, fly to Atlanta, find out our connecting flight is delayed 45 minutes. Atlanta's airport is really boring at 10:30 at night. We walk around for awhile, watching all the shops close up, and finally get on our flight to Miami. Tullio's parents meet us and we finally get to sleep around 2:30.

We didn't really do too much in Florida - not once did we go to the beach. However, one day we did get together with Bill Higgins who was visiting his family for Christmas, and with Steve and Carol Johnson, who were on vacation and visiting her Grandmother. We went to a park that Tullio remembered fondly from his childhood ("I thought that fort was a lot bigger than that" We convinced him that the fort didn't shrink.) We walked along for a while with Carol and Steve bird-watching. Before too long we saw some trees that were too inviting to resist. Tullio, Steve, Bill, and I climbed while Carol took pictures and told Steve not to kill himself. We decided to go to Tullio's fort and we climbed up the sides of that. Bill decided to climb all around it too, and almost succeeded. We went to Burger King for lunch on strict orders from Tullio's mother - our mission - get coupons for Metro-Zoo by ordering a chicken sandwich. After eating and finding ourselves with more time we decided to drive around and look for something interesting. We passed a theater showing Dark Crystal with the next showing in twenty minutes. Tullio and I had seen it a few nights before, but we liked it, and everyone else wanted to see it, so we turned around and went in. After the movie we went home and had manicotti with Tullio's mother trying to get us to eat more, like the typical Italian mother. The next day we went to the zoo with his parents (which is why we had to eat at Burger King the day before) and it was nice, although I got a little sunburned. On Christmas I was feeling a little sad since this was my first Christmas with neither snow falling or snow already on the ground. I felt much better after I found out that it was 60 degrees in Chicago so I wouldn't have had any snow anyway. Then my father called to tell me his car broke down and we'd have to take a cab home from the airport. We got to Chicago around midnight, took a cab, and got to my parent's around 12:45. During the few days we spent there we mostly stayed in and Tullio watched movies on my dad's video disk player. He watched The Godfather one day and we watched Fiddler on the Roof the next.

We had driven down with Steve Salaba so we made arrangements to go back with Bill Higgins, who agreed to come to our party a day before everyone else. It was a real trick job of

packing to get all of our stuff in Bill's car. He was bringing the usual stuff for a weekend plus tinkertoys, and his computer, and his television/monitor, and other assorted goodies. We had the two suitcases we had taken down, plus the set of luggage Tullio's parents had given me, and $40.00 worth of Oriental food we had bought from a small corner store, (including a 25 pound bag of rice) and a new set of pots and pans Tullio's parents had given us as an engagement present, and the fire escape ladder they had given to Tullio, and the indoor grill/rotisserie my parents had given us...and that's just a list of the big things. But we managed to get it all in and we were soon on our way home. We got back around 9:00 and sat up for awhile around the fireplace, talking about how much work we had to do before people were due to arrive, and opening our mail, and feeling good to be home again.

Ishercon 5 - The money worked out fairly well, with the exception of not enough people sending it early, so Tullio and I shelled out $100.00 to get the preliminary shopping done. For awhile I wasn't sure if we'd get paid back, but eventually we did, and there was even enough to pay for the helium. I tended to get too elaborate with my meal plans though, and I think next year all the meals but maybe one will be simple. Cooking Chinese food only takes a few minutes...but before you cook it you have to chop it all up. And when we were feeding 60 people, it was a lot of chopping.

Thursday - People started arriving at 11:00, with Mark Hyde and Desi Bell being the first. Then while Bill and I were out shopping, some more people made it in, and Tullio immediately put the poor souls to work. When we got back with the food, there were only 7 or 8 pieces of drywall left to go upstairs (out of 30). We set the two computers up, leaving room for a third one expected to arrive sometime Friday. We all knew no one was going to actually program anything - it was really just the game room. Tullio put on the text editor with the hopes of getting witty remarks, but alas, people just wanted to play games. The tinkertoys were broken out and building began. We exchanged some gifts and from Steve we got an Isher license plate. Mark Hyde brought some fireworks and had wrapped them up in a package for Tullio which said "caution: thermostellar device".

Friday - The day began with the usual colored pancakes. I went shopping again, this time with John Frambach. When we got back a few hours later, the D & D beginners were having a conference with Tullio, and creating some characters for the game to be played on Saturday. Even though we hadn't even eaten lunch yet, I had to start work on dinner - I was making an appetizer that had to marinate several hours before cooking. After getting the pork marinating, I started organizing lunch. And by the time we were through eating and cleaning up from that, I started working on dinner again. This was our Oriental meal night. After an hour or so of chopping, I realized I'd need some reinforcements, so I went out and grabbed some volunteers. ("Jerry - I've heard you cook Oriental food a lot - you must like chopping up bamboo shoots...) We got one group chopping, I

started cooking, and another group was rolling 100 + egg rolls. Poor Todd ended up braving the cooking oil but the doctors assured us that the scars won't last long. Meanwhile our original group was still chopping away, but finally everything was ready...the egg drop soup...the egg rolls...the barbecue pork...the beef and peapods...and the rice. It was even all ready at close to the same time. But next year, if we decide to eat Oriental food, we order take out. I ended up spending the entire day in the kitchen, which was alright, but it left me dead on my feet. But I still think it was worth it. We had fun, and the food was fine. (I realize that I didn't really cover much of what went on, but as I said, I spent the whole day in the kitchen - and this is my view of what happened) After dinner we got over to Steve's where we all had our fortune cookies. Steve's suprise movie of the year was E.T. About half-way through we took a break to go outside, set off some fireworks, drink some champagne, make some toasts to the new year, sing some songs, kiss and hug some friends, and be happy to be together. Happy new year. Some people then went back to the house, and the rest of us watched the end of E.T. Bill had said to Barry that one of the bad things about the movie was that it taught children that scientists are bad. This started a string of comments about scientists. "scientists drive around in big black vans"..."scientists walk over the hill in lockstep"..."scientists cast long shadows"..."scientists come for you when your mother's away"..."scientists have a freezer in your size"...et cetera.

Saturday - The folks from Grand Rapids (Steve Harrison, Jerry Fellows, & Ardith Carlton) arrived, set up their VCR in the attic and started showing Yamato films. Downstairs the D & D games started going - Phil Meyers was running one in the guest room for advanced players who already had characters of their own, and Tullio ran one in our computer room for the beginning players who had rolled up characters the previous day. Even farther downstairs, Phil Foglio was doing tarot readings. Tullio's game lasted practically the whole day and night, while other people played board games, computer games, and ferris wheel building with the tinkertoys. As the day and the weekend wore on, the ferris wheel grew larger and more elaborate as did the system for making it turn. At night we ate turkey and ham, cooked mostly by other people this time (though I did do the ham) Later came the mandatory helium balloon singing. Bill was in his usual good and crazy form, and Clif put in his fair share of amusing songs. (We all have to work on Clif to get him to write down his songs and copy them for us so we can all sing along too.) We stayed up till 2 (or was it 3...or 4...?) singing our lungs out. No matter how often I do the exact same thing, it's still great fun.

Sunday - Some people (those who live far away like Mike and Alice) had to leave. A small group of people went to the air musuem, and later met the rest of us at Star World. We played games for a few hours then came back and ate dinner. The tinkertoy ferris wheel by this time had the inner circle rotating one way, the outer circle going the opposite way, and flags hitting bars which swung back to hit gongs every revolution of

the wheel. People started slipping away rapidly at this point. By the end of the evening we had a small cozy group of Tullio and myself, Phil and Cecila, Jim, Rod, and Dave Powell. Also Dick Smith made his appearance about this time. Five of us played Risk and Jim took over the world. For perhaps the first and last time in Ishercon history we had a bed (or at least mattress) for everyone that night. and Martha + Mike

Monday - We cleaned up the house a little, and played Dark Crystal, Dungeon!, and other equally mindless games. In the afternoon everyone was gone and the house was quiet once again. It was a sad sound. Tullio and I didn't do too much other then remember the things that had occured in these rooms during the past weekend, look over the poster board, and sigh a little sadly - another year, another party, some new friends, many lengthy farewells, another memory to treasure. Thank you all for being there or calling to say hello if you couldn't. It was fun - let's do it again some time.

$$$$$ $$$$$ $$$$$ $$$$$ $$$$$ $$$$$ $$$$$

"POOR BUT HAPPY"

Ah yes, the title. That is Tullio's latest motto for us. He has been unemployed for most of the past three or four months. And it's the slow season for the company, too. We've sort of been living day to day and wondering how we'd pay the bills this month. Somehow we always seem to just get by. (although we have had to use some of our wedding savings even though we try not to touch that once we get it in the account) Mostly Tullio's parents have been helping us out with some loans. Well, that's the poor part. You will notice however, that it also says happy. We are more happy then ever before. Having the house to ourselves is really nice - being able to do what we want, and having room to move. We even brought the record player to the basement to listen alternately to Bob Dylan and Roger Whittaker while we worked. It would be really nice to have money, but if we can't, at least we've got love. It's nice to know that someone's there for you no matter what. And it means we're happy. When you're young, everyone (except maybe William Goldman) tells you that life is fair, and it'll all work out in the end. If you lead a good life, you'll get rewarded, and if you don't, you'll be punished. Sometimes I wish that life was as clear cut as that. And I often hope that it'll all work out in the end. Maybe it will. Against pretty high odds we've made it this far. I think we'll make it all the way.

!!!!! !!!!! !!!!! !!!!! !!!!! !!!!! !!!!!

The other day I bought a Brides magazine to look through. I wanted to start sending in for all the little free booklets they offer to help you plan everything. Tullio has no qualms about getting married - but he's not so sure he wants to have a wedding. I'm not sure we can afford to have one. Tradition aside, my parents do not intend to pay for our wedding. We had planned on having it in Chicago to be close to most of my

relatives, but I'm afraid our finances may dictate having it in Kalamazoo to make it a smaller, less expensive affair. Having it here would probably mean that only my immediate family would come, cutting down our guest list by about sixty or seventy. And we'd probably have the reception at our house, cutting out a lot of money that would be spent on renting a hall. But who knows - maybe I'll win a sweepstakes. I'm afraid I might be writing a lot about our wedding in the future - I suppose I'm like the classical girl-who-always-dreamed-of-the-perfect-wedding. That's what I want, but I doubt my girlhood dreams will come true. Things never seem to turn out the way you dream of them. Sigh.

Many good wishes to Martha and Mike who will be getting married this April.

Many good wishes also to Alice and Mike who will be getting married this June.

My condolences to Todd whose father has passed away.

And farewell to all who are reading this, for I've come to the end of this chapter of The Rise of the House of Isher. Be seeing ya' - - -

-Donna

+++++ +++++ +++++ +++++ +++++ +++++ +++++

Late Breaking News

I have some Diablo terminal ribbons we don't need. 3 black cloth at $5.95 each, and 1 multi-strike at $5.25. If any one is interested in buying them, let me know. in that I know they fit Alex's printer scince that's why they were ordered in the first place, if no one wants to buy them, I will give them to the chair to be used as money in my account for a total of $23.10. This will make my total rather high, especially considering that the apa isn't usually mailed to me, but we have no use for them.

The little cat that Phil gave me at Ishercon is missing - did anyone pick it up by mistake? I'd sort of grown attached to the little thing.

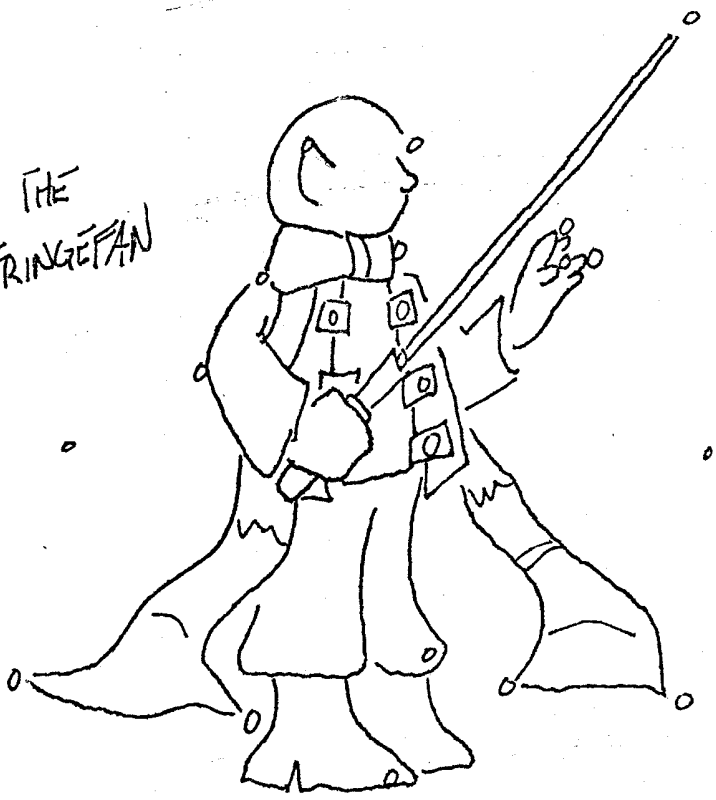
Happy Valentine's Day.

THE QUINTESSENTIAL SINGULARITY 21

THE TECHIE



THE FRINGEFAN







THE STUDENT

THE QUINTESSENTIAL SINGULARITY 21

1 February 1983

being a journal of complex, imaginary, and irrational studies
produced by the Center for Spaced Research, a division of Ossa-on-Pelion
RR 1, Box 390, Apt. 5, Hamburg, New Jersey 07419
(201)-827-6111 (still not Vernon Valley Ski Resort!)
Gregory Ruffa, Director and Ladybug Tender

Ossa-on-Pelion Headquarters: 1220 Lenape Way, Scotch Plains,
New Jersey 07076 (201)-753-9207

Additional material has been provided by W. Skeffington Higgins. The cover for QS 19 (de-rezzing Mickey) was commissioned from one Kip Williams. The current cover is a commission from Paul Gadzikowski. In case you had wondered, QSs 16, 17, and 20 have not been overlooked; they're just specific projects that ain't finished yet. They should be out Real Soon Now...

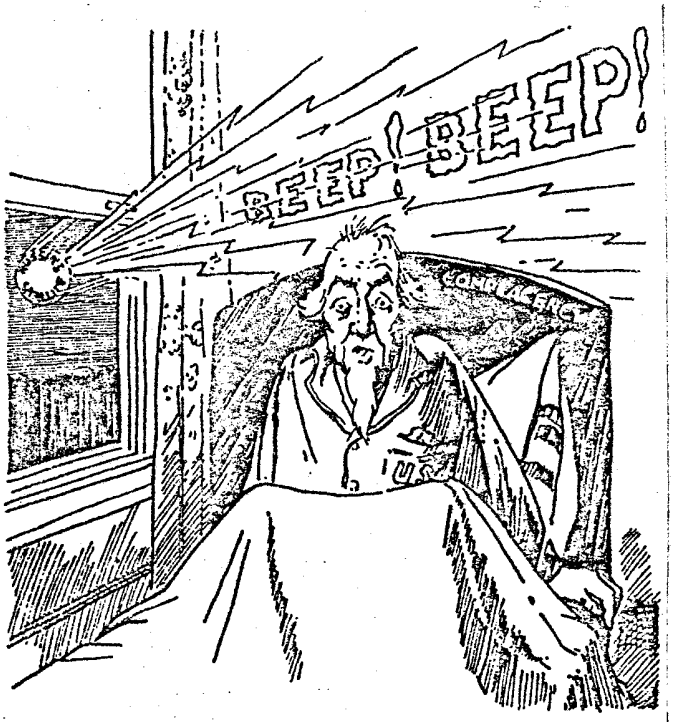
* * *

The last five months seem to have disappeared somehow and here I am pounding out another issue at the last minute before rushing off to Illinois again. There have been an awful lot of side projects and journeys in that interval -- rather more than I have time to detail. But let's have a go at it...

After Chicon, I went down to Chambana to bobble about for a couple days. For Thursday-night, Rolf, John Nine and I joined Bill-Aytch at the Goodman Theater in Chicago to see The Flying Brothers Karamazov, who are a team of four rather amazing jugglers (definitely not Communists...). They do not go in for displays involving merely large numbers of objects, but instead explore the possibilities of complicated trajectories and passes between members. I'd never seen a percussion ensemble performed upon with Indian clubs... They also juggle hatchets, sabers, and other implements of destruction; they are certainly the most daring juggling act I've seen. They'll dare anything: they formed a square about members of the audience huddled onstage and passed clubs about them. They'll also take a selection of three objects tossed up onto the stage by the audience and, after suitable modification, juggle them. The Brothers were joined by the bizarre mime Avner the Eccentric in various sketches; Avner also performed some solo bits. They are definitely a group to see about once a year as they add new material to their act.

To show you how late this is, this started out to be my observance of the 25th anniversary of the launch of Sputnik I, the Robert Goddard Centennial, and the 125th anniversary of the birth of Konstantin Tsiolkovsky, all back in the first week of October. Well, that didn't work out, but I didn't forget those dates entirely. I was supposed to give a talk for the Sheep Hill Astronomical Association, up in northern New Jersey, on the first Sunday of October. By Sunday afternoon, I'd realized that I couldn't be coherent enough about relativistic cosmology to be interesting, so I still needed a topic. Then I remembered those anniversaries and thought, "Wait a minute, I know where I have enough material prepared to give a talk on spaceflight!" So I dug out my old APA-TECHs and spoke on "Future Space Voyages." Talk about a cheap solution to a bad situ-

ation! In case you missed this event, I'll be giving a revised and edited version of this talk at Capricon ("Cheap solutions are also cheap to use again!"), which you can hear unless you wisely find something else to do that afternoon. Now I have to figure out what I'm going to talk to Sheep Hill about next month...



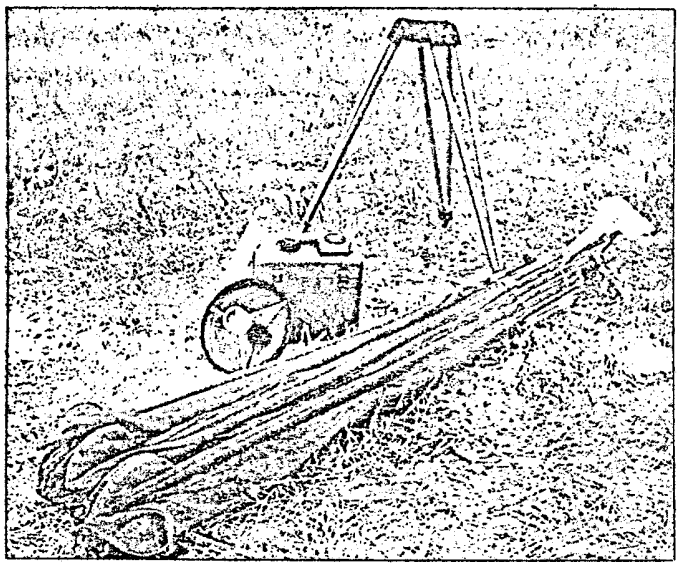
Reaction of the news media is typified by cartoon published in *New York Times* on October 13, 1957.

I'd never been to Conclave before and was surprised at just how small it was. It was pretty nice for being able to spend more time talking to individuals, instead of meeting for mass activities the whole time and spending about two minutes with each person. Saturday, I wound up in Ann Arbor twice, once with Ed "Zed", who chauferred, and Valli, who'd just returned from Ann Arbor (you can't be there too often!), and again with about fourteen other folks in the Bentley Bus to descend upon an Afghani restaurant. We had a good roaring philosophical debate going on our end of the table and I learned about a few more books I ought to read (I put them on the list...). Sunday afternoon and evening were spent toodling around Ann Arbor (what, again?) with Chris and Cecile Cloutier, Herb Johnson, and Bill-Aytch, concluding with dinner at the Old Heisenberg (once they set the dish in front of you, you can't be sure what you're eating...).

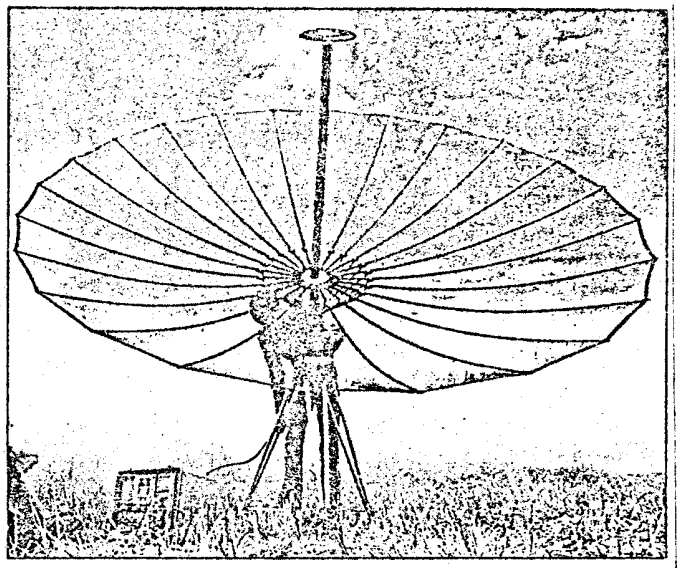
Much as I would like to come to an Ishercon some year, what I could afford to do for New Year's Eve was to go to Boston. I got to spend a lot of time with just about everyone I know who still lives there. I particularly wanted to be there for First Night, which is a city-wide arts festival held from about 3 PM to midnight on the 31st. For three dollars, you buy a badge and can walk into various designated buildings to attend poetry readings, plays, vaudeville, folk music performances, jazz concerts, classical recitals, and so forth. The one problem is that there are about 150,000 other folks who are trying to do the same. The strategy appears to be to pick out about three things you want to see, prepare a list of alternatives, leave yourself enough time to walk between events, and try to outguess the crowds. The friends I was with wanted to hear a couple of New England folk singers; we did get in for that. We then spent the next hour-and-a-half trying to get in somewhere else. Finally, we reached a performance of progressive jazz by a group called "Aardvark." They had two 50-minute sets: I liked the music, my friends were content to stay, and the hall was warm. We got back to Doc Consolmagno's apartment at 11:40; everyone was ready to zonk out. I stayed up until 12:01 to see in the New Year. You couldn't see the fireworks from Back Bay, anyhow.



Cartoon expressed Uncle Sam's relief at the successful Explorer I flight.



The Gillaspie portable earth station collapses like an umbrella.

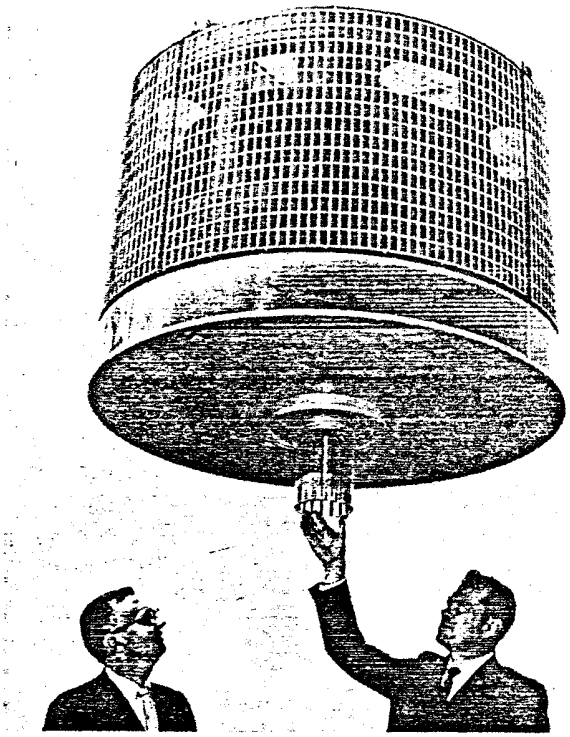


Harry Harp, Gillaspie and Associates, watches TV on the five-inch screen that is part of the portable earth station shown installed here.

Perfect for use with your modified Speak'n'Spell... - *from Satellite Communications, November 1982*

Last month was kind of busy. Through the suggestion of the planetarium director at Orange Cat College, I was invited to give a talk at Ridge High School in Basking Ridge, New Jersey (I think this is his way of getting back at me...). The 13th was declared Astronomy Day at the school; the person coordinating the program wanted a professional (giggle) from industry (hee hee) to speak on "Careers in Astronomy" (stop -- I can't take it...). I was tempted to stomp into the assembly, shout "There AREN'T any!!" and leave. What I did do was tell the kids that astronomy, being a "useless" field in our society, doesn't offer much in the way of careers, except for the rare openings in Academia. But there will be plenty of work for people with astronomical background in communications satellites, the Shuttle program, near-Earth and deep-space exploitation, planetary missions, and, maybe within their lifetimes (c. 2030?), interstellar flight (well, I can hope...).

I got to go to a conference on the Deep Space Tracking Network at Lincoln Laboratories in Lexington, Mass. Originally, three of us had been invited to attend during the 18th and 19th, but WU has managed to get itself strapped for money presently and cancelled the trip on us. Then my boss asked me if I still wanted to go and was able to secure approval for one person. There were about sixty people there, mostly from industry, with a few government folks and about a dozen Air Force officers between the ranks of lieutenant and major. What the people who called the meeting wanted were the people who actually did orbital analysis: I was one of only about ten people in that line of work who were there. What I got to hear about were things like the Millstone Hill radar site, next to Haystack Observatory near Westford, Mass., where they track everybody; the GEODSS system, which uses a network of 40" telescopes to track spacecraft at night by reflected sunlight; NAVSPASUR, a string of huge dipole antennas across the southern U.S. for observing satellites crossing the Equator, so the orbital information can be used to warn Naval vessels when the Russians will be watching; the growing orbital debris problem; and other items



Full-scale model of the "ultimate" Hughes Syncom communications satellite. Designed to pursue a stationary orbit 22,300 miles above the equator, the 500-lb. satellite is being developed simultaneously to relay four television programmes or 1200 two-way telephone calls between North and South America, Europe and Africa. The smaller test-vehicle is shown on page 107.

United States Information Service.

Ultimate? Gosh wow! - *from Spaceflight, May 1963*

of varying interest. What I didn't get to hear about was the radar imaging work being done at Haystack (it must have been good, though: it was classified...). Instead, I got a private tour of the Millstone facility, along with a couple of people from Telesat Canada. Millstone is a project under development by Lincoln Labs, under an Air Force contract. They use a 150-foot steerable (!) dish to bounce three-megawatt (!!) signals off orbiting bodies; I believe they can see a one-square-meter object at geosynchronous altitude (about 40,000 km.). They have six categories of objects under observation. Top priority goes to bodies which are "decaying and dangerous"; you can bet they were watching Cosmos 1402 every time it went by (it wasn't above the horizon while I was in the control room). Second priority goes to other objects in decaying orbits; we watched a couple of rocket bodies falling out of geosynchronous transfer orbits. Westars and Aniks are down in category five; we're "friendly geosynchronous satellites."* The staff tracked a few of them for us. The radar signature can tell the observers whether the spacecraft is in stable rotation and something about its structure; we could see the deceased Anik A-1 wobbling around up there. The business of tracking military satellites gets complicated at times: the Air Force has some things out there that it doesn't talk about, but they get picked up as "unidentified objects" anyway, which the Air Force then tries to deny are there (don't worry, they're not the Other Guys'); there are also certain satellites the Air Force asks Millstone to track, but orders them NOT to analyze the radar signature ("Is looking 'analyzing'?")

The chief purpose of the conference was to make the various agencies and corporations aware of a growing crisis in information management. There are now over 5000 objects that Millstone and NORAD (and others) keep an eye on, including a large number of no particular military interest. They feel it would be useful to them for folks with commercial or other non-threatening spacecraft to keep everyone up-to-date on orbital data, so the Air Force can concentrate on watching The Other Guys. We are now sending monthly reports to Millstone and NORAD about orbital elements and large maneuvers (I'm patriotic, after a fashion...)*

* *i.e., "harmless"*

I saw Mr. Sekiya in Manhattan the following weekend. He was at the IBM compound in Kingston, New York for a few weeks and wanted to visit The City. (Evidently, he's in Kingston a lot: I had his room number and called the hotel to leave a message for room 223. "Oh, you mean Jeff?") I took him to see the Museum of Holography, where they had one of their usual strange artistic exhibits (actually, there are now quite a number of people producing good works in this medium). We spent quite a while at Forbidden Planet, satisfying our science-fictional needs (the comix are starting to take over the ground floor and the robots are grabbing the basements...). Later, we had a leisurely lunch at the Elephant & Castle, catching up on such news as I had of mutual friends and acquaintances. He said he might make Capricon...

The next weekend was a rainy Confusion, so no bonus day was awarded. There was the traditional Economic Suicide Raid on Ann Arbor, with John Nine subbing for Jerry Corrigan. Apparently, the GT get-together and Nikki Ballard going-away party was quite successful, as the room seemed far more crammed than usual, with some people spilling away into the lobby and the pool area (amazing what you can do with four bottles of champagne!). There were folks coming in swimming as late as 4:30 AM, where they were regaled by Higgins' "Water Music" ("Gosh, Bill, how many songs are there about chlorination?").



Ken Whitmore

Murphy lives!

If there is a wrong way to do something, then someone will do it.

—Edward A. Murphy Jr.

To most people Murphy's law is a joke. But to its originator, a real live person named Edward A. Murphy Jr., his law is a serious maxim about mankind's fallible interactions with machines. Anyone who confronts a piece of equipment for the first time, says Murphy, should find out if there is a way to bollix it. Can a part be put in backwards? Can two wires be crossed? If so, heed Murphy's admonition and make doubly sure that doing something the "wrong" way is difficult—preferably impossible.

Murphy's law has been around since the first caveman realized that it was always the tenderest piece of meat that fell off his skewer into the fire. But not until 1949 was this law of nature given the name it bears today. In that year, Air Force Major John Paul Stapp was piloting a rocket sled in tests at Muroc —now Edwards—Air Force Base to find out how much acceleration a human body could stand. Air Force Captain Edward Murphy had developed special harness fixtures that held 16 sensors to measure the accelerational forces bearing on Stapp's body. The rocket sled was fired, subjecting Stapp to g-forces approaching 40 times Earth's gravity.

Stapp released his harness and with bloodshot eyes stumbled back to where a technician stood.

"How many gees did the sensors read?" croaked Stapp.

"Zero," said the technician nervously.

Perplexed, Stapp telephoned Murphy, who flew back from Ohio to Muroc the next day. As it happened, there were two ways to glue each sensor to its fixture. Someone had methodically installed all 16 the wrong way.

"If there are two or more ways to do something," Murphy pronounced, "and one of those ways can result in a catastrophe, then someone will do it."

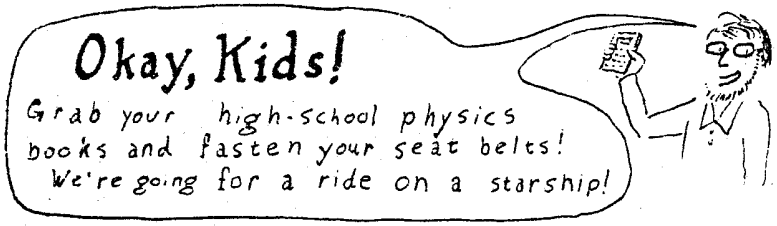
Project engineer George Nichols immediately dubbed it Murphy's law. At the press conference following the rocket sled test, Stapp mentioned that the project's excellent safety record could be credited to a firm belief in Murphy's law. Within a few months, Murphy's law was being mentioned in aerospace manufacturers' ads, and the Flight Safety Foundation began to quote it in their official bulletins.

Then the humorous variations began to appear. The most popular version—"If something can go wrong, it will"—is anathema to the very serious Edward Murphy. Its fatalistic acceptance of the inevitable perverts his original concept of a sort of moral to help prevent accidents.

As a reliability engineer for Hughes Helicopters Inc., Murphy's current job is to make sure that his law doesn't work its will on helicopters. He has long since abandoned hope that he will be popularly recognized as the creator of the law that bears his name. It seems to be his fate just because he's stuck with an ordinary name like Murpy.

—Robert L. Forward

Wow, not only is he a deity, he's even a real person!! *- source unknown*



OUR FRIEND MR. RUFFA HAS TWO COMPLAINTS ABOUT THE BRITISH INTERPLANETARY SOCIETY'S PROJECT DAEDALUS UNMANNED STARPROBE DESIGN:

1. ITS DESTINATION, BARNARD'S STAR, IS NEITHER AS CLOSE NOR AS INTERESTING AS THE ALPHA CENTAURI SYSTEM.
2. IT SPENDS ONLY A FEW HOURS ZIPPING THROUGH THE TARGET SYSTEM, WHICH SEEMS A SHAME AFTER TWENTY YEARS OF CONSTRUCTION AND FIFTY YEARS ENROUTE.

LET'S LOOK AT WHAT HAPPENS IF WE WANT TO BRING DAEDALUS TO A STOP AT BARNARD'S STAR, AND IF WE SEND IT TO ALPHA CENTAURI INSTEAD.

DAEDALUS PERFORMANCE

ACCORDING TO THE BRIEF DESCRIPTION GIVEN BY TONY MARTIN AND ALAN BOND IN THEIR CONTRIBUTION TO THE PAPPAGIANIS BOOK, THE PROBE WILL ACCELERATE FOR 3.8 YEARS UNTIL IT REACHES ABOUT 12.3% OF THE SPEED OF LIGHT. THEN IT WILL COAST FOR 46.2 YEARS AT THIS SPEED, FINALLY ENCOUNTERING THE BARNARD'S STAR SYSTEM.

DISTANCE TO BARNARD'S STAR $S_{BS} = 5.91$ LIGHT-YEARS $= 5.60 \times 10^{16}$ meters

ACCELERATION TIME $t_a = 3.8$ years $= 1.20 \times 10^8$ seconds

TOTAL MISSION TIME $T = 50$ years $= 1.58 \times 10^9$ seconds

COAST TIME $t_c = 46.2$ years $= 1.46 \times 10^9$ seconds

COAST VELOCITY $v_c = .123c = (.123)(3 \times 10^8 \text{ m/sec}) = 3.69 \times 10^7 \text{ m/sec}$

COAST DISTANCE $S_c = v_c t_c = (3.69 \times 10^7 \text{ m/sec})(1.46 \times 10^9 \text{ sec})$
$= 5.38 \times 10^{16} \text{ m} = 5.68$ LIGHT-YEARS

ACCELERATION $a = \frac{v_c}{t_a} = \frac{3.69 \times 10^7 \text{ m/sec}}{1.20 \times 10^8 \text{ sec}} = .308 \text{ m/sec}^2$
$= .031$ "g"

BOOST DISTANCE $S_a = \frac{1}{2} a t_a^2 = \frac{1}{2}(.308)(1.2 \times 10^8)^2 = 2.2 \times 10^{15} \text{ m} = .23 \text{ ly}$

FAST TRACK TO ALPHA CEE

NOW, THE DISTANCE TO ALPHA CENTAURI S_{ac} IS ONLY 4.38 LIGHT-YEARS, OR 4.15×10^{16} meters. IF WE SEND THE DAEDALUS PROBE THERE, IT WILL AGAIN BOOST FOR 3.8 YEARS, ACHIEVE A TOP SPEED OF .123 C AT A DISTANCE OF $S_a = .23$ LIGHT-YEARS FROM EARTH, AND FLY THROUGH THE SYSTEM AT THE END OF T YEARS. WHAT IS T?

FIND S_c: $S_c = S_{ac} - S_a = 4.15 \times 10^{16} \text{ m} - 2.2 \times 10^{15} \text{ m} = 3.93 \times 10^{16} \text{ m}$

$S_c = v_c T \longrightarrow T = \frac{S_c}{v_c} = \frac{3.93 \times 10^{16} \text{ m}}{3.69 \times 10^7 \text{ m/sec}} = 1.07 \times 10^9 \text{ sec}$

$\boxed{T = 33.8 \text{ YEARS}}$

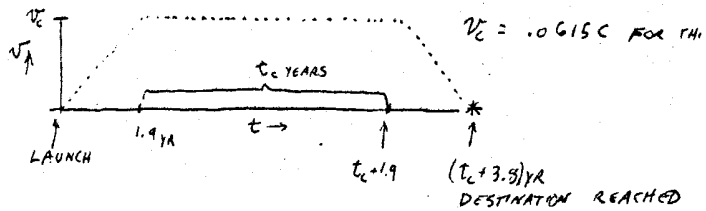
MUCH BETTER. IF YOU ARE ON THE LAUNCH CREW, YOU HAVE A BETTER CHANCE OF LIVING TO SEE THE DATA COME IN, LESS THAN 40 YEARS LATER, THAN THE GUYS WHO WAIT 16 YEARS FOR A LOOK AT BARNARD'S STAR.

STOP THAT STARSHIP!

THE TROUBLE WITH A HIGH SPEED LIKE .123c IS THAT IT'S FAR TOO FAST FOR ANY OF THE USUAL TRICKS TO BE USEFUL; ATMOSPHERIC BRAKING, LIGHT PRESSURE, OR BILLIARDS WITH PLANETS AND SUNS WOULDN'T TAKE MORE THAN A FRACTION OF A PERCENT OFF THE PROBE'S SPEED. SO SLOWING DOWN HAS TO BE DONE BY BRUTE FORCE, CARRYING ENOUGH FUEL TO BRING THE PROBE TO A STOP WITH ITS ROCKET MOTORS. TO STOP THE PRESENT DAEDALUS PROBE ON ITS ORIGINAL MISSION, YOU'D NEED TO ADD ENORMOUS THIRD, FOURTH, AND PERHAPS MORE STAGES, AND THE TIME NEEDED TO GATHER THE He_3 FUEL FROM JUPITER'S ATMOSPHERE WOULD STRETCH INTO CENTURIES. LET'S SEE WHAT WE CAN DO WITH THE PRESENT DESIGN.

A ROCKET IS LIMITED BY THE AMOUNT OF KINETIC ENERGY IT CAN GIVE ITSELF. THIS IS CONVENIENTLY EXPRESSED AS "DELTA-VEE," (ΔV) THE TOTAL

CHANGE IN VELOCITY THE ROCKET CAN UNDERGO. IT'S REASONABLE TO TAKE THE ΔV OF DAEDALUS AND SPLIT IT IN HALF - OF THE .123c AVAILABLE, THE PROBE SPEEDS UP TO .0615c AT THE START OF THE TRIP, AND TURNS AROUND TO KILL ITS SPEED BY THE SAME AMOUNT AT THE END. EACH OF THESE PHASES WILL TAKE HALF THE ORIGINAL ACCELERATION TIME ($\frac{1}{2} t_a$ = 1.9 YEARS). IN BETWEEN THEM, THE CRAFT WILL COAST FOR t_c YEARS AT .0615c.



v_c = .0615c FOR THIS MISSION

BECAUSE THE COASTING SPEED IS SO MUCH SLOWER, THIS MISSION WILL TAKE MUCH LONGER THAN THE ORIGINAL DAEDALUS MISSIONS. LET US AGAIN CALCULATE 'T'. THE SAME ACCELERATION a = .308 m/sec^2 WILL BE USED.

$S_{TOTAL} = S_a + S_c + S_d$ WHERE S_a IS THE DISTANCE COVERED DURING DECELERATION.

NOW $t_a = \frac{1}{2}(3.8\,yr) = 1.9$ YEARS $= 6.0 \times 10^7$ seconds

AND $S_a = \frac{1}{2} a t_a^2 = \frac{1}{2}(.308\ m/sec^2)(6.0\times10^7\ sec)^2 = 5.54\times10^{14} m = .059\ ly$

SINCE $t_a = t_d$ AND a IS THE SAME, $S_a = S_d = .059$ light-years

THEN $S_c = S_{TOTAL} - 2(.59)$ LIGHT-YEARS.

$$T = t_a + t_c + t_d = t_c + 3.8 \text{ years}$$

$$t_c = \frac{S_c}{v_c} = \frac{(S_{TOTAL} - .118)\ \text{LIGHT-YEARS}}{.0615c}$$

FOR BARNARD'S STAR,

$$t_c = \frac{(5.91 - .118)}{.0615c} = \frac{(5.792\ ly)(9.467\times10^{15}\ m/ly)}{(.0615)(3\times10^8\ m/sec)} = 2.97\times10^9 sec = 94.2 \text{ YEARS}$$

$$\boxed{T = 94.2 + 3.8 = 98 \text{ YEARS}}$$

FOR α CENTAURI,

$$t_c = \frac{(4.38 - .118)}{.0615} = 2.19\times10^9 sec = 69.3 \text{ YEARS}$$

$$\boxed{T = 73.1 \text{ YEARS}}$$

But What Do We Do When We Get There?

To continue on the subject of interstellar probes, I have a couple of ideas concerning Eric Drexler's proposals for ultralight solar sails. They might well be employed to give small sub-probes the freedom of the target system without any worries about fuel.

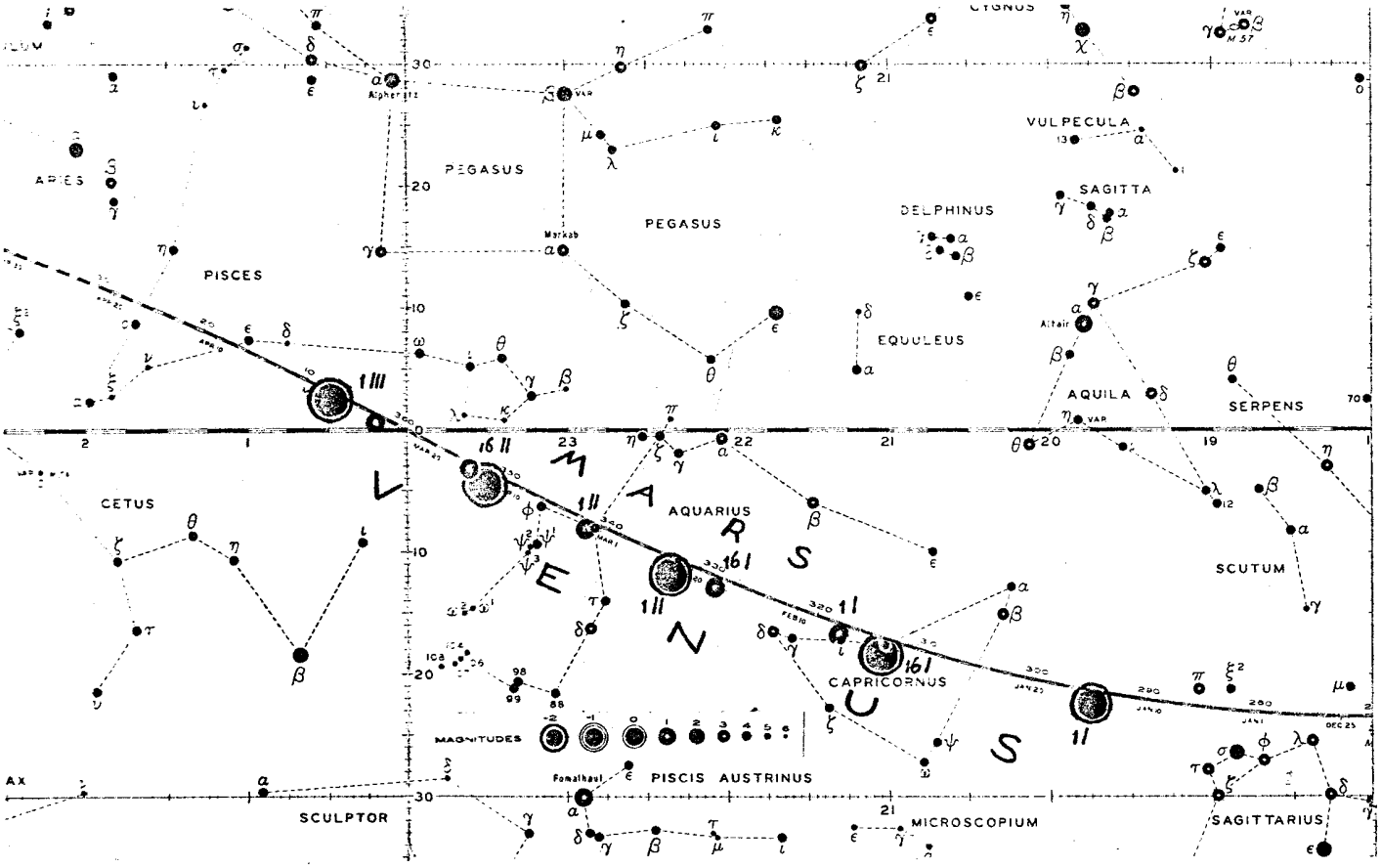
If the mother probe, such as the modified Daedalus I've just described, does indeed come to rest in the target system, it will release small Voyager-type probes to wander off to various interesting locations. It can carry a sail-making module and enough aluminum to make sails for each daughter probe. Drexler estimates the mass of a first-generation sail factory at 20 tonnes, and claims that the sails can give 5 solar gravities of acceleration (which depends on the mass and luminosity of the star, of course, but the two brightest Alpha Centauri stars are roughly similar to Sol). Therefore such a sail can boost four times its mass at one solar gravity, which sould be enough to take it anywhere in the system given time.

Daedalus's payload is intnded to be 500 tonnes. So 20 tonnes for the factory module, plus 20% of each probe's mass for its sail, does not seem like an unreasonable cost for unlimited manuverability. It certainly beats any other form of propulsion.

Perhaps the best strategy would be to flash through the system at cmising speed, as in the original mission, making a preliminary and hurried survey, and only then decelerate to a stop. You'd have to coast slowly back over a fraction of a light-year, adding several years to the mission, but some data would be in hand even if something went wrong with the deceleration phase of the flight. Furthermore, the extra flight time might even allow controllers on Earth to guide the "slow" exploration after analysis of the "fast" data. Also at this time the sails for the daughter probes might be constructed.

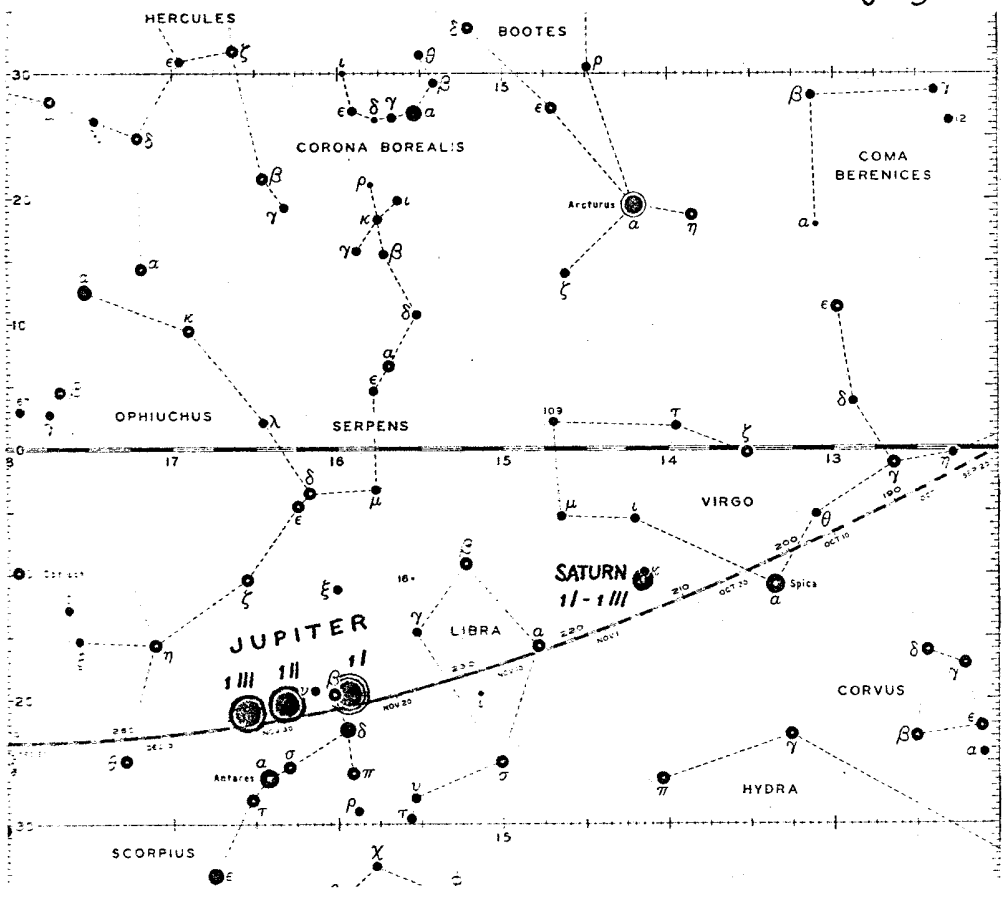
Another intriguing possibility, specifically for an Alpha Centauri expedition, is that having three suns around makes for interesting games of interplanetary billiards. In that system a solar sailor has three sources of light and three sources of gravity to play with. (Actually it reduces to a two-sun problem nearly everywhere: near Proxima, the bright stars A and B are about in the same place in the sky because they're so close to each other; in regions where they seem widely separated, Proxima is so distant and dim that its light is insignificant.)

Remarks, anyone?



the evening sky

the morning sky



THE PLANETS — 1 JANUARY to 1 MARCH

Venus begins to intrude into the evening sky, appearing very low in the southwest at sunset by the end of January. It will move progressively higher in the southwest through February and will be the brightest object in the night sky, after the Moon.

Mars will be higher up in the southwest at sunset in January, setting three hours after the Sun. On February 18, Venus will be one-half a degree (one Moon-diameter) south of Mars.

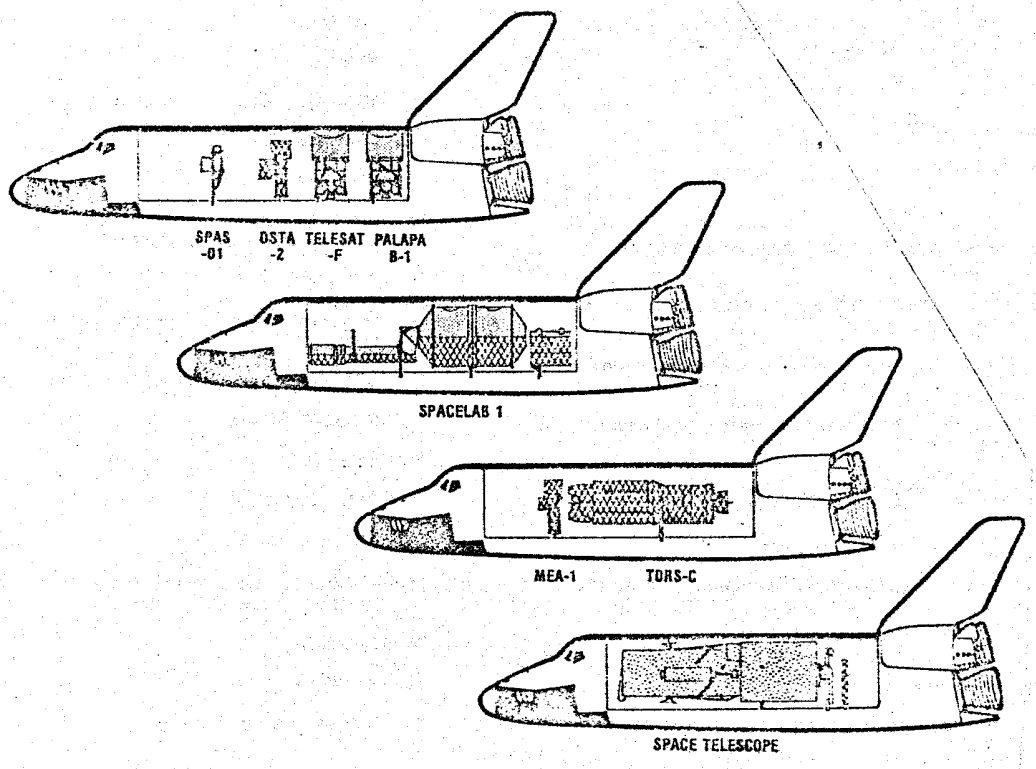
Jupiter will rise $3\frac{1}{2}$ hours ahead of the Sun at the start of this interval; it will be quite bright and lie low in the south at sunrise. It will be passing north of Antares during the last half of February. Saturn rises after midnight and will appear to the southwest at sunrise.

FUTURE STS FLIGHTS

STS FLIGHT	VEHICLE	NO. CREW	DAYS	LAUNCH/ LAND SITE	INC/ALTITUDE o/sta (nm)	PAYLOADS	REMARKS
5	Columbia	4	5	KSC/EAFB	28.5/184 (160)	1, 2*	No RMS, no IECM, one GAS (Getaway Special), Development Flight Instrumentation (DFI) pallet.
6	Challenger	4	3	KSC/EAFB	28.5/172 (150)	3*	First Flight of OV-099, lightweight External Tank – lightweight SRB casings, SSME's, 109 percent, no RMS, four GAS, RMS and galley removed.
7	Challenger	4	6	KSC/TBD	28.5/184 (160)	4, 5, 6, 7*	RMS on, seven GAS, SSME's 109 percent, heavyweight External Tank, lightweight SRB casings, galley removed.
8	Challenger	4	3	KSC/TBD	28.5/172 (150)	8, 9*	Lightweight External Tank, lightweight SRB casings, high performance SRB motors, RMS off, galley removed, SSME's 109 percent.
9	Columbia	6	7	KSC/TBD	57/155 (135)	10*	RMS off, galley on, lightweight External Tank, lightweight SRB casings, high performance SRB motors.
10	Challenger			KSC/KSC		11*	SRB casings, high performance SRB motors.
11	Columbia	4	7	KSC/KSC	28.5/184 (160)	12, 13, 14, 15*	RMS on
12	Discovery	4	5	KSC/KSC	28.5/172 (150)	16, 17*	First flight of OV-103, RMS off.
13	Challenger	4	5	KSC/KSC	28.5/313 (272)	18, 19*	RMS on, first mission to use direct insertion launch.
14	Columbia	4	5	KSC/KSC	28.5/184 (160)	20, 21, 22, 23*	RMS on
15	Discovery	4	3	KSC/KSC	28.5/172 (150)	24, 25*	
16	Challenger			KSC/KSC		26*	
17	Columbia	4	7	KSC/KSC	57/210 (183)	14, 27, 28, 29*†	RMS on
18	Discovery	4	4	KSC/KSC	28.5/184 (160)	30, 31, 32, 33†	
19	Challenger	6	7	KSC/KSC	57/230 (200)	34†	
20	Columbia	4	7	KSC/KSC	28.5/184 (160)	14, 35, 36, 37*†	
21	Discovery	6	7	KSC/KSC	50/232 (202)	38†	RMS on
22	Challenger			KSC/KSC		39†	
23	Columbia	4	7	KSC/KSC	28.5/184 (100)	14, 40, 41*†	
24	Discovery			KSC/KSC		42†	
25	Challenger	4	3	KSC/KSC	28.5/368 (320)	43, 44†	RMS on
26	Columbia	4	5	KSC/KSC	28.5/184 (160)	45, 46, 47, 48†	
27	Challenger	4	2	KSC/KSC	28.5/115-253 (100-220)	49†	
28	Atlantis	4	7	KSC/KSC	28.5/184 (160)	50, 51, 52, 53†	First flight of OV-104
29	Columbia	6	7	KSC/KSC	57/201 (175)	54†	
30	Challenger	4	5	KSC/KSC	28.5/184 (160)	55, 56, 57, 58†**	
31	Atlantis			KSC/KSC		59†	
32	Columbia	4	7	KSC/KSC	28.5/184 (160)	60, 61, 62, 63**	RMS off
33	Challenger	4	7	KSC/KSC	28.5/184 (160)	64, 65, 66, 67**	
IV	Discovery			VAFB/VAFB		68†	First launch from Vandenberg AFB, CA.
34	Atlantis	6	7	KSC/KSC	28.5/184 (160)	69†	
35	Columbia	5	7	KSC/KSC	28.5/184 (160)	57, 70, 71†	
36	Challenger	4	7	KSC/KSC	28.5/184 (160)	72, 73, 74, 75†	
37	Atlantis			KSC/KSC		76†	
38	Columbia	4	5	KSC/KSC	28.5/184 (160)	77, 78, 79†	
39	Challenger	5	7	KSC/KSC	28.5/184 (160)	80, 81, 82†	
40	Atlantis	4	7	KSC/KSC	28.5/184 (160)	83, 84, 85, 86†	
41	Columbia	4	7	KSC/KSC	28.5/184 (160)	87, 88, 89, 90†‡	
42	Challenger	4	2	KSC/KSC	28.5/115-327 (100-285)	91‡	

STS FLIGHT	VEHICLE	NO. CREW	DAYS	LAUNCH/ LAND SITE	INC/ALTITUDE o/sm (nm)	PAYLOADS	REMARKS
2V	Discovery	4	3	VAFB/VAFB	98.2/195 (170)	14* 92‡	
43	Atlantis	5	7	KSC/KSC	28.5/184 (160)	94, 95‡	
44	Columbia			KSC/KSC		96‡	
45	Challenger	4	3	KSC/KSC	28.5/176 (240)	97, 98‡	
46	Atlantis	4	7	KSC/KSC	28.5/184 (160)	14*, 99, 100, 101‡	
47	Columbia			KSC/KSC		102‡	
3V				VAFB/VAFB		103‡	
48	Challenger	4	7	KSC/KSC	28.5/184 (160)	104, 105, 106‡	
49	Atlantis	5	7	KSC/KSC	28.5/184 (160)	107, 108, 109*	
50	Columbia	4	5	KSC/KSC	28.5/184 (160)	110, 111, 112, 113*	
51	Challenger			KSC/KSC		114*	
4V	Discovery			VAFB/VAFB		115*	
52	Atlantis	4	7	KSC/KSC	28.5/184 (160)	116, 117, 118*	
53	Columbia	4	7	KSC/KSC	28.5/184 (160)	119, 120, 121, 122*	
54	Challenger			KSC/KSC		123*	
55	Atlantis	6	7	KSC/KSC	57/230 (200)	124*	
5V	Discovery			VAFB/VAFB		125*	
56	Columbia	6	7	KSC/KSC	57/230 (200)	126*	
57	Challenger	4	7	KSC/KSC	28.5/184 (160)	127, 128, 129**	
58	Atlantis	4	3	KSC/KSC	28.5/184 (160)	130, 131, 132**	
59	Columbia	5	7	KSC/KSC	57/184 (160)	133, 134, 135**	
6V	Discovery			VAFB/VAFB		136, 137**	
60	Challenger	4	3	KSC/KSC	28.5/276 (240)	138, 139**	
61	Atlantis	6	7	KSC/KSC	57/184 (160)	140**	
7V	Discovery			VAFB/VAFB		141**	
62	Columbia			KSC/KSC		142**	
63	Challenger	4	5	KSC/KSC	28.5/184 (160)	14, 143, 144††**	

Typical 'Cargo' Loadings
STS MISSIONS



PAYLOADS

1. SBS (Satellite Business Systems) -C/PAM (Payload Assist Module) -D (Light Payloads Class): Used to place payloads into higher orbit.
2. TELESAT (Canada Telecommunications Satellite) -E/PAM-D.
3. TDRS (Tracking Data Relay Satellite System) -A/IUS (Inertial Upper Stage) -2: two stage booster used to place payloads into higher orbit.
4. SPAS (German Shuttle Pallet Satellite) -01 Unique Structure.
5. OSTA (Office of Space and Terrestrial Applications) -2/MPESS (Multipurpose Experiment Support Structure).
6. TELESAT -F/PAM-D.
7. PALAPA (Indonesian Communications Satellite) -B1/PAM-D.
8. INSAT (India Communications Satellite) 1-B/PAM-D.
9. TDRS-B/IUS-2 Stage.
10. Spacelab No. 1/Spacelab Long Pressurized Module Plus One Spacelab Pallet.
11. DoD (Department of Defense) 84-1.
12. PDRS (Payload Deployment and Retrieval System)/PFTA (Payload Flight Test Article).
13. LFC (Large Format Camera)/MPESS.
14. Payload opportunity.
15. PALAPA B-2/PAM-D.
16. TDRS-C/IUS-2 Stage.
17. MEA (Materials Experiment Assembly) -1/MPESS
18. LDEF (Long Duration Exposure Facility) -1.
19. SMM (Solar Maximum Mission) Repair/FSS (Flight Support System).
20. OAST (Office of Aeronautics and Space Technology) -1/MPESS.
21. TELESAT -I/PAM-D.
22. RCA (Radio Corporation of America/Satellite) -K/PAM-D.
23. SYNCHOM (Hughes Synchronous Communication Satellite) IV-1/Unique Stage.
24. TDRS-D/IUS-2 Stage.
25. SBS-D/PAM-D.
26. DoD 84-2.
27. OSTA-3/Pallet.
28. ERBS (Earth Radiation Budget Satellite)/Unique Stage.
29. SPARTAN (Shuttle Pointed Autonomous Research Tool for Astronomy)/MPESS.
30. WESTAR (Western Union Company Communication Satellite)VII/PAM-D.
31. ARABSAT (Saudi Arabian Communication Satellite)/PAM-D.
32. TELESTAR (American Telephone and Telegraph Communications Satellite) 3-C/PAM-D.
33. SYNCHOM IV-2/Unique Stage.
34. Spacelab No. 3/Spacelab Long Pressurized Module Plus MPESS.
35. OSTA-4/MPESS.
36. RCA-L/PAM-D.
37. SPC (Southern Pacific Communication Satellite) -B/PAM-D.
38. Spacelab No. 2/Igloo Plus 3 Spacelab Pallets and Unique Structure.
39. DoD 85-1.
40. EOS (Electrophoresis Operation in Space)-1/Special Structure.
41. SYNCHOM IV-3/Unique Stage.
42. DoD 85-2.
43. Space Telescope.
44. LDEF Retrieval.
45. MEXSAT (Government of Mexico Communication Satellite)/PAM-D.
46. SATCOL (Republic of Columbia Communication Satellite) -A/PAM-D.
47. SBS-E/PAM-D.
48. PALAPA B-3/PAM-D.
49. Galileo/IUS-2 Stage.
50. OAST-2/Pallet.
51. RCA-H/PAM-D.
52. GSTAR (General Telephone Company Communication Satellite) -C/PAM-D.
53. TELESTAR 3-D/PAM-D
54. Spacelab D-1 (German Spacelab Payload/Long Pressurized Module) Plus Special Structure.
55. SYNCHOM IV-3/Unique Structure.
56. SPS-C/PAM-D.
57. Reserve STS.
58. ANSCS (Australian National Satellite Communications System) -A/SSUS-D.
59. DoD 85-3.
60. SATCOL (Republic of Columbia Communications Satellite) -B/PAM-D.
61. EOS-2/Special Structure.
62. SPC-D/PAM-D.
63. SYNCHOM IV-5/Unique Stage.
64. MPS (Materials Processing Science)-1/Pallet.
65. TELESAT-H/PAM-D.
66. ANSCS-B/SSUS-D.
67. AMERSAT (American Satellite Company Communication Satellite) -A/PAM-D.
68. DoD-86-IV.
69. Spacelab No. 4 (Life Science)/Spacelab Long Pressurized Module.
70. OSS-4/IGLOO Plus Two Spacelab Pallets.
71. GSTAR-D/PAM-D.
72. DoD/PAM-D.
73. OSTA-5/Pallet.
74. ANSCS-C/PAM-D.
75. STC (Satellite Television Corporation) DBS (Direct Broadcast System) -A/PAM-D.
76. DoD 86-1.
77. SPARTAN-1/MPESS.
78. MEXSAT/PAM-D.

79. INTELSAT VI-1.
80. OSS-5/IGLOO Plus Two Spacelab Pallets.
81. ANSCS-D/PAM-D.
82. AMERSAT-B/PAM-D.
83. OSTA-6/MPESS.
84. UNISAT (British Communications System) -A/PAM-D.
85. RCA DBS (Direct Broadcasting Satellite) -1.
86. DoD/PAM-D.
87. DBS LUX (Radio Tele-Luxembourg Direct Broadcast) -A/PAM-D.
88. RCA-M/PAM-D.
89. STC DBS-B/PAM-D.
90. DoD/PAM-D.
91. ISPM (International Solar Polar Mission)/IUS-2 Stage.
92. LANDSAT Retrieval/FSS (Flight Support System).
93. OSS-6/IGLOO Plus Two Spacelab Pallets.
94. INTELSAT VI-2.
95. OSS-6/IGLOO Plus Two Spacelab Pallets.
96. DoD 86-2.
97. LDEF-2.
98. DoD/PAM-D.
99. STC DBS-C/PAM-D.
100. UNISAT B/PAM-D.
101. DoD/PAM-D.
102. DoD 86-3.
103. DoD 87-IV.
104. EUVE (Extreme Ultraviolet Experiment).
105. MPS-2/Pallet.
106. INTELSAT VI-3.
107. DoD/PAM-D.
108. OSS-7/IGLOO Plus Two Spacelab Pallets.
109. RCA DBS-2.
110. IRIS (Italian Research Interim Stage)/PAM-D.
111. STC-DBS-D/PAM-D.
112. UNISAT-C/PAM-D.
113. ARABSAT-B/PAM-D.
114. DoD 87-1.
115. DoD 87-2V.
116. AMERSAT-C/PAM-D.
117. INTELSAT VI-4.
118. DoD/PAM-D.
119. TELESAT-J/PAM-D.
120. OAST-3/IGLOO Plus One Spacelab Pallet.
121. DoD/PAM-D.
122. STC-DBS-E/PAM-D.
123. DoD 87-2.
124. Spacelab D-4/IGLOO Plus Two Spacelab Pallets.
125. DoD 87-3V.
126. Spacelab No. 6 Spacelab Short Pressurized Module Plus Three Spacelab Pallets.
127. OSTA-8/MPESS.
128. RCA DBS-3.
129. DoD/PAM-D.
130. RCA-I/PAM-D.
131. STC-DBS-F/PAM-D.
132. INTELSAT VI-5
133. OSS-3/IGLOO Plus Two Spacelab Pallets.
134. SPARTAN-3/MPESS.
135. DoD/PAM-D.
136. OSTA-7/Pallet
137. COBE (Cosmic Background Experiment).
138. LDEF-2 Retrieval.
139. DoD/PAM-D.
140. Spacelab No. 8/Spacelab Long Pressurized Module Plus One Spacelab Pallet.
141. DoD 87-4V.
142. DoD 87-3.
143. GOES (Geostationary Operational Environment Satellite)-1/PAM-D.
144. DoD/PAM-D.

Space Agency Schedules 16 Launches for 1983

Kennedy Space Center—National Aeronautics and Space Administration plans to launch 16 space vehicles carrying 21 payloads in 1983. There are five space shuttle launches scheduled, along with eight Deltas, two Atlas Centaurs and one Atlas E.

In addition, a spare Delta launcher will be available to carry a payload if one is required in early December, and a second Atlas F will be available to orbit a second National Oceanographic and Atmospheric Satellite next year from Vandenberg AFB if a replenishment relay is needed for that weather satellite system.

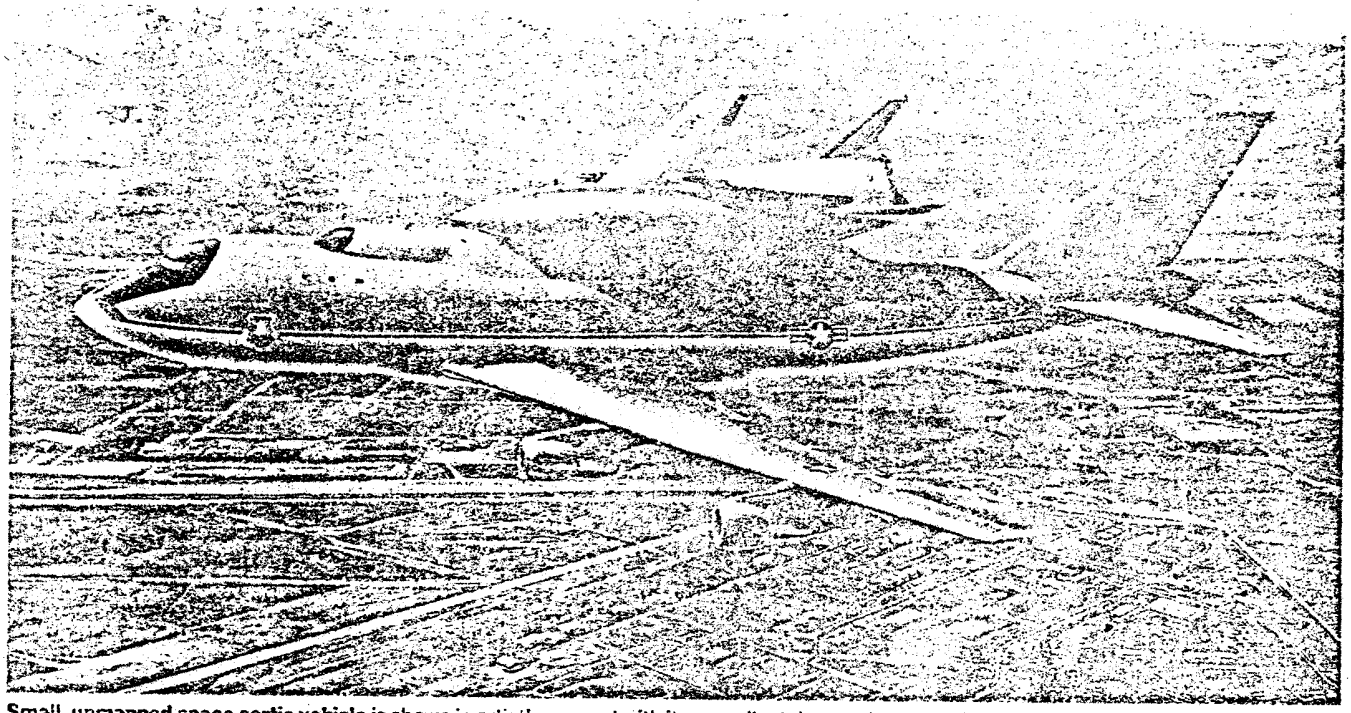
Month by month, the NASA schedule for the coming year is:

- **January**—The sixth shuttle mission is to be launched Jan. 27 carrying the first tracking and data relay satellite into low Earth orbit from the cargo bay of the second orbiter, Challenger. The payload will be propelled into a geosynchronous orbit by an inertial upper stage. This system consisting of three satellites will replace NASA'S ground-based tracking and data network now in use. On Jan. 27, an infrared astronomical satellite (IRAS) is set for launch from the Western Test Range as a Delta payload.
- **February**—Intelsat 5 was scheduled to be launched from Cape Canaveral Feb. 10 as an Atlas Centaur payload. The nose cone for this vehicle was damaged Dec. 10 when it broke two power lines as it was being moved on a flatbed truck to the payload assembly building here. It was not known if this incident will delay the launch. A NOAA weather satellite is scheduled for launch Feb. 15 from Vandenberg AFB as an Atlas E payload. Launch of this satellite, containing the first U. S. search and rescue beacon, may be delayed until March.
- **March**—RCA-F, also called Satcom G, scheduled Mar. 3 as a Delta payload from Cape Canaveral.
- **April**—Seventh space shuttle launch, also with Challenger, is scheduled Apr. 20 carrying four payloads. Two are communications satellites that will be boosted into geosynchronous orbit by solid spinning upper stages. They are the Canadian Telesat Anik and Indonesian Palapa satellites. The other payloads are a NASA Office of Space and Terrestial Applications and a German payload called SPAS. A geostationary environmental operational satellite (GOES) is scheduled for an Apr. 28 launch from Cape Canaveral as a Delta payload.
- **June**—A Hughes Galaxy communications satellite is scheduled for launch as a Delta payload June 9 from Cape Canaveral.
- **July**—Space shuttle Mission 7 is scheduled for launch July 4, although this launch may be moved forward into June. A July 28 launch is scheduled from Cape Canaveral using a Delta that will carry an AT&T Telstar communications satellite into orbit.
- **August**—An RCA Satcom H is scheduled for an early August launch on a Delta from Cape Canaveral, and the second NOAA satellite will be launched from Vandenberg AFB using an Atlas E if this launch is necessary.
- **September**—Another Galaxy is scheduled for launch Sept. 15 from Cape Canaveral on a Delta.
- **October**—Spacelab 1 is scheduled to be launched in the modified orbiter Columbia on the ninth shuttle mission scheduled for Oct. 1. On Oct. 27, a NATO communications satellite is scheduled for launch as a Delta payload from Cape Canaveral.
- **December**—An Atlas Centaur carrying Intelsat 5A is scheduled for launch Dec. 1. The tenth space shuttle mission, this one using the orbiter Challenger, is scheduled for launch Dec. 14 with a Defense Dept. payload.

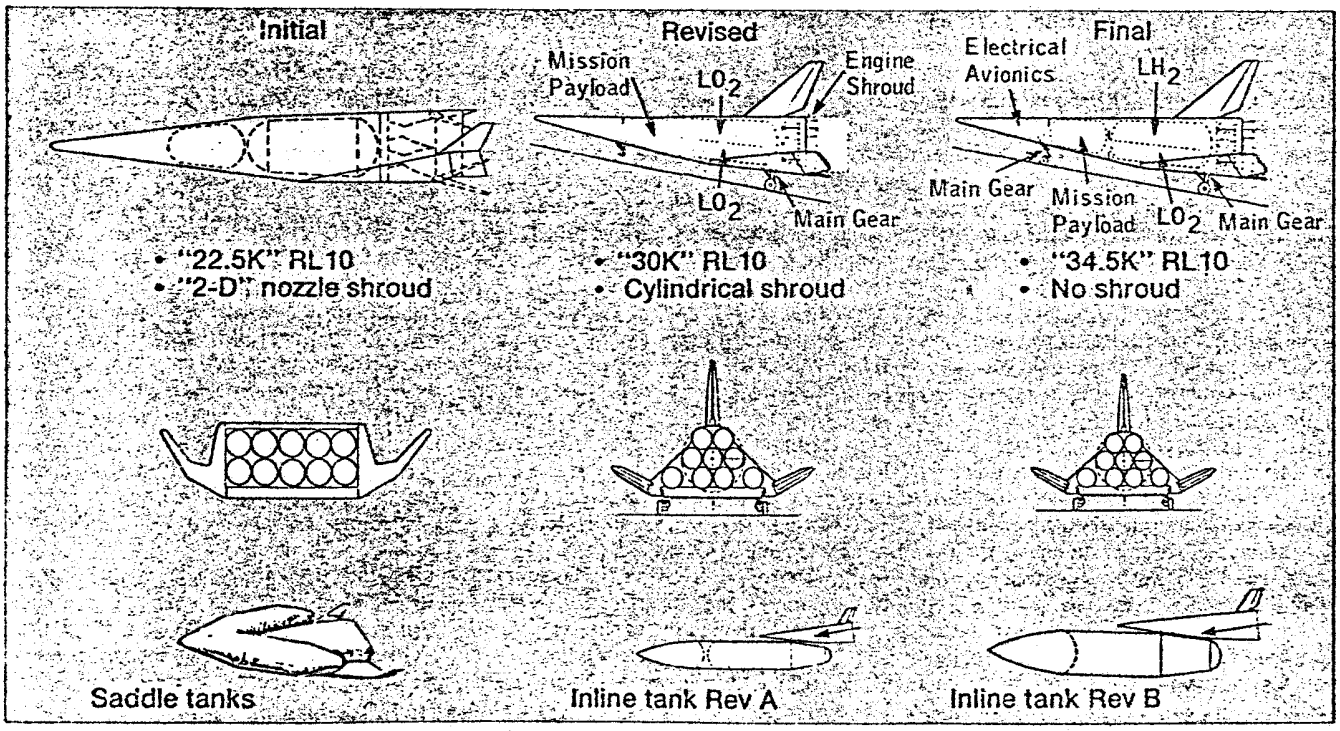
Overall, seven Delta and two Atlas Centaur launches are scheduled from Cape Canaveral, five shuttle flights from Kennedy Space Center, and 1 or 2 Atlas E and one Delta launch from Vandenberg AFB.

AW&ST, Dec. 27, 1982

Study Shows Space Sortie Concept Viable by 1990

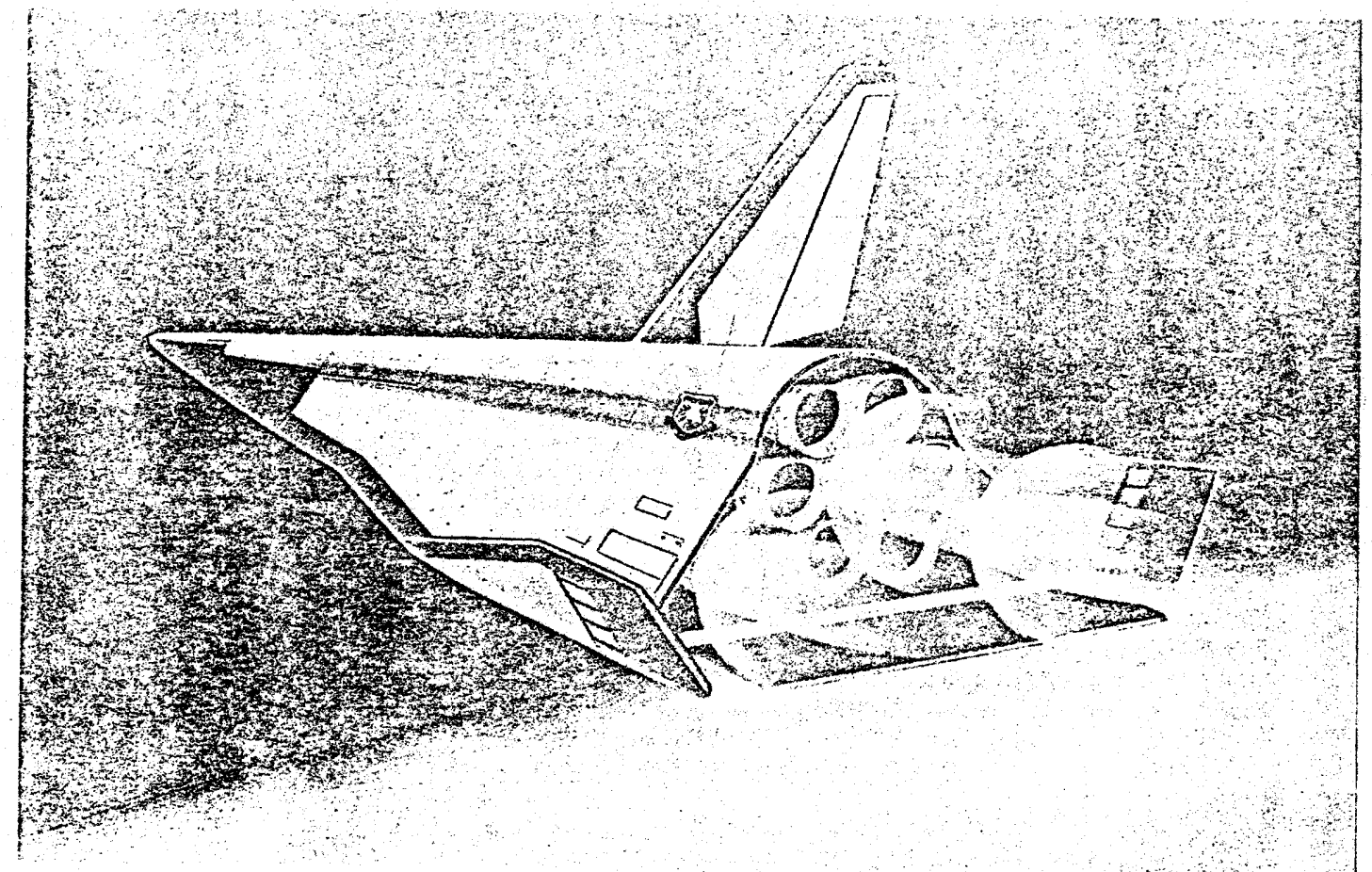


Small, unmanned space sortie vehicle is shown in artist's concept with its propellant drop tank mounted on top of a modified Boeing 747 launch aircraft. The aircraft and space vehicle could remain on alert at an air base to provide a rapid response and all-azimuth launch capability.



Initial, revised and final views of space vehicle and drop tank designs for a conceptual space sortie system are shown in the illustration. The drawing resulted from a preliminary Air Force Rocket Propulsion Laboratory study which was conducted to evaluate use of a cluster of Pratt & Whitney RL10 engines on such a vehicle. The small, unmanned spacecraft and drop tank would be mounted on a Boeing 747 for air launch.

Aviation Week & Space Technology, November 1, 1982



Companies Study Space Sortie Vehicle for USAF's Rocket Propulsion Laboratory

Conceptual unmanned spacecraft called the space sortie vehicle is shown in an artist's rendering as it would appear approaching injection into low Earth orbit, about 7 min. after launch from a Boeing 747 carrier aircraft (AW&ST Nov. 1, p. 69). The concept, utilizing existing propulsion systems and space shuttle technology, would be available for use by the end of the 1980s, according to the Air Force's Rocket Propulsion Laboratory (RPL). The concept is being studied by RPL, Pratt & Whitney and Boeing. Such a vehicle could provide the Defense Dept. with a rapid response capability and a survivable system for access to space. The vehicle would return to Earth for a runway landing at the conclusion of the mission. Studies have shown that nine Pratt & Whitney RL10 Centaur engines, each modified to produce 34,500 lb. of thrust, could produce the necessary power to propel the small vehicle with a satellite or sensor payload. The rendering shows the vehicle at an altitude of about 350,000 ft. with propellants being supplied by internal tanks. A large external propellant tank previously would have been discarded and destroyed during reentry, giving the spacecraft an all-azimuth launch capability. Weight of the sortie vehicle at the point depicted in the rendering has been reduced to about 12% of its initial separation weight with a full propellant drop tank. Six of the vehicle's nine engines, as a result, have been shut down to avoid excessive acceleration. Thrust vector control is provided by the two gimballed outboard engines, while the circular cluster of seven engines in the center is fixed to minimize base area. Pratt & Whitney said the ability to more than double the thrust of an existing engine gives the sortie vehicle its near-term operational capability. Boeing worked under contract to Pratt & Whitney to evaluate the vehicle, propellant drop tank and 747 launch aircraft.

AW&ST, Nov. 1982

213. _____

There is also the following joke about Von Neumann. He was consulted by a group who was building a rocket ship to send into outer space. When he saw the incomplete structure, he asked, "Where did you get the plans for this ship?" He was told, "We have our own staff of engineers." He disdainfully replied: "Engineers! Why I have completely sewn up the whole mathematical theory of rocketry. See my paper of 1952." Well, the group consulted the 1952 paper, completely scrapped their 10 million dollar structure, and rebuilt the rocket exactly according to Von Neumann's plans. The minute they launched it, the entire structure blew up. They angrily called Von Neumann back and said: "We followed your instructions to the letter. Yet when we started it, it blew up! Why?" Von Neumann replied, "Ah yes; that is technically known as the *blow-up problem*—I treated that in my paper of 1954."

Another couple chapters in the continuing saga...

So much for Von Neumann probes...

(from Raymond Smullyan's What is the Name of this Book?)

We also had the requisite Saturday lunch at the Cozy Cafe in Plymouth and then dragged about ten people back there on Sunday for more pie before leaving town (definitely Mercy Farms-class pie!).

My future plans have been altered somewhat. I was planning to go back to graduate school this fall, but I found out that they want me to take my GRE tests all over again; December was not the time to find that out. So it looks like I'll be hanging around ol' Westar until next year. Biggs was right...

As for travels to come, I have about six weeks of ideas to follow through on in two weeks of vacation. I'll have to stretch the compensation time somewhat. After my imminent tour of Illinois, I'll be going to Atlanta to usher in the other Bill-H's wedding on April 9th. I plan to go to Marcon during March 74-76, certainly the latest one in living memory. The July 4th Shuttle launch is a total wash-out, so I'll be spending the first two weeks of the month visiting the cities of California. Then there's Baltimore in September, for which I can finally make living arrangements. Windycon is too soon afterwards and Chicago has become too expensive to reach for a weekend again, so I'm going to Conclave instead since it will be right in Ann Arbor. I'd also like to get to Boston and Rochester before summer.

* * *

Why did Aladdin pour club sode into the Lamp?
Because he wanted a djinn and tonic.

* * *

Things at work are all back to routine. Westar-I and -II arrived safely at 79° West and -IV and -V are pretty much behaving themselves. Westar-I is Officially Dead: one of the tanks ran out of fuel back in November, so we have been able to stop paying Hughes $25,000 a month in bonuses (that doesn't mean we got to keep the dough...). It also doesn't mean that it can't generate some revenue. It will be used in a team-up with Two again during eclipses season in March, since both have bum batteries (we split the message load, turn off half the transponders on each, and make them act like one whole satellite). The fact that One will have a 0.3 degree orbital inclination and will only spend a couple hours in the antenna beam each day just makes it that much more challenging! (I hate it already...) Westar-VI is going up early next year. With Ariane rather shaky and the Shuttle schedule in disarray, there is a chance we may go up on the Challenger, instead of Ariane. At our site, they are finishing a new extension we were supposed to have occupied by December 1st. Lots of new microwave equipment will go in there, which means we get to grab some old communications territory for our use. More space for us folks in Satellite Control, or so we're told. Plenty of fun for all this spring...

* * *

What's worse than finding a worm in your apple?
Finding a bug in the operating system.

* * *

Back to work -- more to come soon! Green jets.

RABBIT RUNES

i.I v.II

10 February 1983

Generated by hollow muses feverishly working in a tree for John H. Frambach

Sawyer Michigan 49125

When I was younger, my mother would occasionally make reference to an occurrence or product from her youth and then say, "Well, I guess that dates me!" Visions of huge mills stamping people's backs with their bithdates, and later with registered™ trademarks, would run through my mind. Recently, my maker's mark has been showing up quite often.

The last time this happened was a few weeks ago when I was watching the CBS Friday Latenight Movie. The film was a compilation of two Kolchak, The Night Stalker episodes. One episode concerned a doppelgänger whose living form was killed in a pinball arcade. About thirty seconds into the establishing shot of the arcade it suddenly occured to me that something didn't "feel" quite right in the scene. Like a flash the thought struck me, " where is the brrzt's? The sounds of aliens screaming in terror as they're blown out of existence? Where are the cute little faces that threaten to destroy the world? My gahd, there aren't any video games in there!"

The disturbing element here is not the lack of video games, but the fact that it seemed a natural enough scene without the little buggers. Kolchak first aired when I was in high school, so I guess that means I grew up b.v.g. (before video games) when boxes ringed and gonged and buzzed and it was 10¢ a game, three for a quarter, and the Pinball Wizard could do blind with one shot what took me fifteen balls to achieve. Atari has created a gulf between myself and the current crop of adolescents greater than the one between my parents and I, created by the space program. Which brings up another mark, all the knee knockers running around who aren't old enough to remember the Apollo program. To our parthe moon landings were science fiction, to my peer's children they are history, but we were there, growing with the space effort. Gosh, what a great time to be alive. It is really disheartening to see my sibling being choked off in its youth when young adulthood holds so much promise.

Noticed the new type face? There comes a time when lower case is useful, and this typewriter works a heckuva lot smoother than the other one (wish I could say the same about the operator). Besides, this gives me a chance to show off a little of my collection. Some people capture butterflies and pin them to boards, others pick-up matchbooks in out-of-the-way places, I seem to accumulate typewriters. There's four sitting in my room, three which work and three that I own (not necessarily the same ones). The same thing happens with old desk references and an occaisonal cookbook, I'll run across something at a book sale or flea market and pick it up with out really thinking about it. There is some allure about old, well used books that I can't explain. Perhaps the knowledge that the book was an integral part of a person's everyday life thirty or forty years ago is part of the attraction, a continuation of that individual's life whenever I use the book. A similar feeling comes over me when I pick up a projectile point or scraper.

WHO SAID...

..."Watch your step or we could wind up packing parachutes in a room with no windows?"

It was said on television last year on a reoccurring series. I don't really expect anyone to recgonize this quote, but I found it a rather ineresting statement.

Sales and Marketing Management magazine quoted a rather nifty statement made by Norman McMullin, publisher of the Dubuque Iowa Telegraph Herald : "If it weren't for the printing press, we'd all be monks

working for Xerox."

**********THE ROUTING LIST**********

CNG for DOTs

The January 1983 issue of Better Roads featured an article on compressed natural gas as an alternative fuel for state department of transportation vehicles. There are, according to BR, some 400,000 methane fired vehicles running in the world today (over 250,000 of those are in Italy, which has had over 40 years experience with methane fueled vehicles).

Citing New Zealand's experience with conversion from imported fuels to indigenous natural gas, the article makes a good arguement for the conversion of fleet vehicles, such as busses and delivery vans. As of last July, New Zealand had about 22,00 vehicles converted toCNG, with a goal of 150,000 by the end of 1985. The average pump price of CNG there is 35¢ per gasoline liter equivalent, compared to 71¢ per liter for gasoline, making the use of CNG very attractive. The major hold-up in the conversion program is the availibility of filling stations, which are only being built in areas served by natural gas pipelines. This isn't that much of a problem in the urban areas, though, since they are already piped, and other areas are being added.

Besides the monetary savings (even at the cost of $1,100 for the conversion from gas to CNG, there is a two year payback figuring 15,000 miles a year at 16.5 miles per gallon) there are operating advantages that sound pretty good. CNG is harder to ignite than gasoline, leaks tend to dissipate rather than form puddles, and even minor leaks are easily detected becuase of the added odor. CNG also has an 130 octane rating.

We may well see gasoline being the exception used in remote locations and CNG being the common fuel in many countries.

US nixes LOS

According to the Engineering and Mining Journal, January 1983, the U. S. of A. was one of 47 countries to reject the Law of the Sea Treaty in Jamaica (the Montego Bay Convention) in December. Of the 117 nations that did sign the treaty, only 60 have to ratify it for the treaty to take effect, and then it will only be binding on those nations that ratify it. Under the LOS, a portion of the treaty dealt with seabed mining of ore nodules on the Pacific Ocean floor, stating that they are "the common heritage of mankind". A complex global authority would be set up to mine the nodules, with a global mining enterprise receiving one site equal in size or value to any mined by a national or private company. The U.S. State Department believes that the industialized nations will join the U.S. in blocking the treaty if Third World nations maintain their hard line on conditions for seabed mining. Meanwhile the White House plans on issueing a proclamation creating a 200 mile economic zone around the U.S. in an effort to demonstrate U.S. determination to boycott the LOS.

Given the Bird

S&MM awarded Lockheed Missile and Space Co. of Sunnyvale, CA, the Pigeon Feed Award for low cost alternative air courier service. Lockheed is useing a fleet of 15 carrier pigeons to fly blueprint microfilms 25 miles to its Santa Cruz labs. The trip is done in half the time it would take a truck to make the delivery.

GOTCHA!

Every so often, an ad header will hold my attention. The Reader's Digest has been running a series of ads in Adweek to attract new advertisers. The 20 December, 1982 issue had one that I liked. The ad was about 5½ by 8 in, and the head copy used about half of that, as follows: "During the last half million years, the balmy weather we've enjoyed this century has prevailed only 2% of the time. Now we're due for the other 98%."

---------- MGs re everybody ----------

I don't know about the rest of you, but I APA hack for the fun of it. Don't worry about deadlines overly much, deadlines are for invasions and paying clients. Ditto distro, a conscientious effort is what we get, and all I ask.

Whiteout Playhouse presents

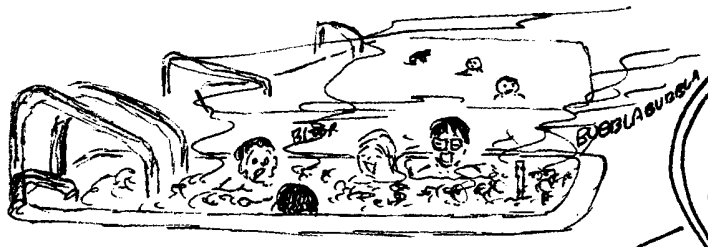
True Confusions



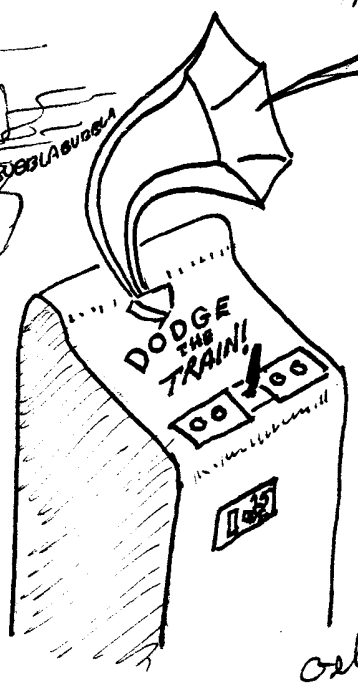
The Hunt and Peck Method of FINDING THE CON







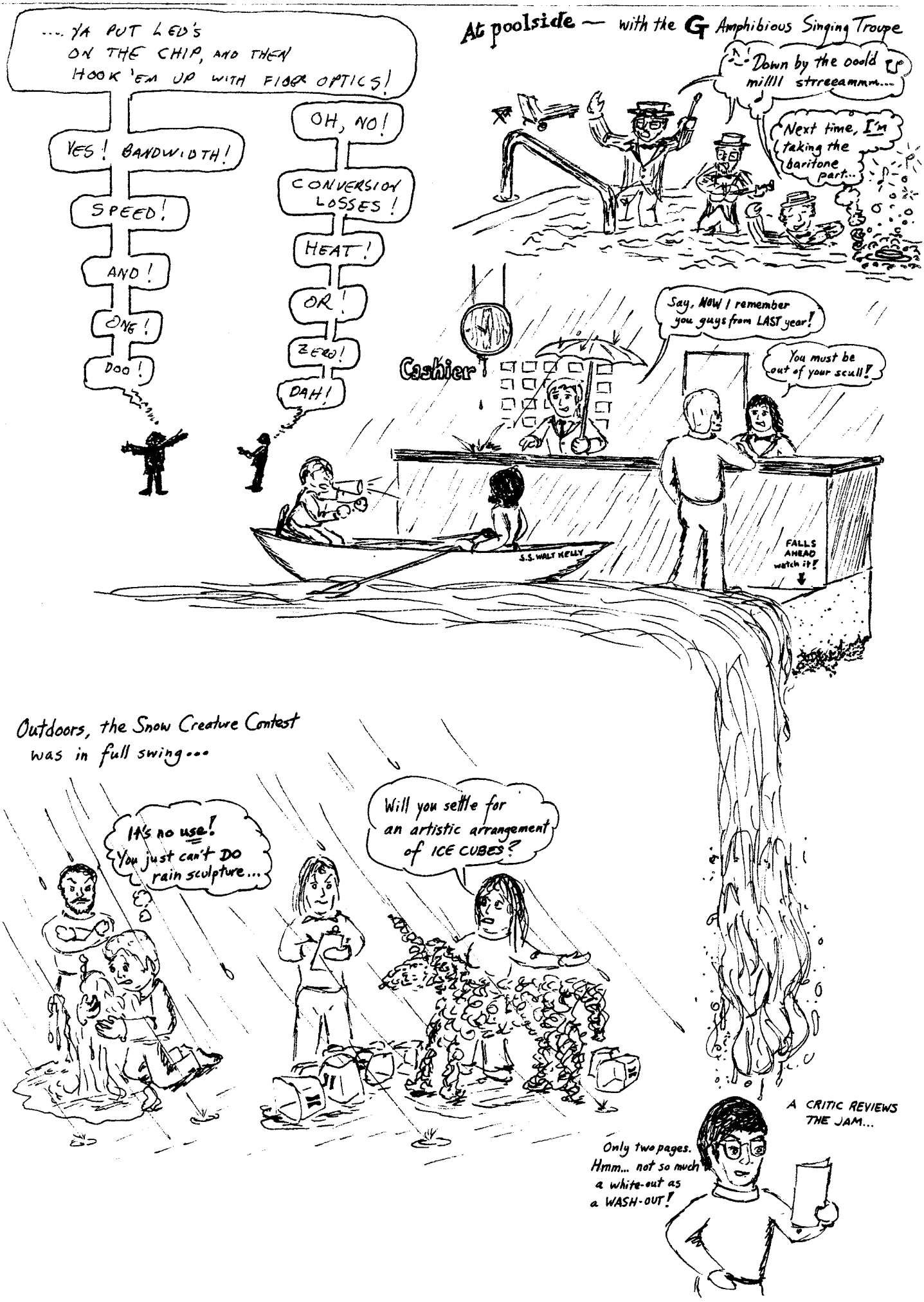


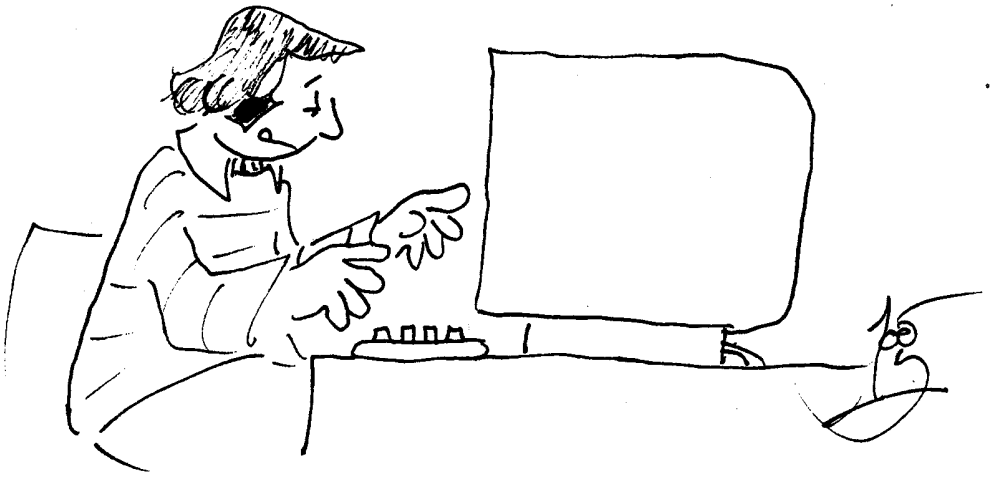


GOOD THINGS ABOUT THE INVENTION OF THE CATHODE-RAY TUBE: (#1 IN A SERIES)

Audio games were boring!

Oslun 83


.... YA PUT LED'S ON THE CHIP, AND THEN HOOK 'EM UP WITH FIBER OPTICS!
YES! BANDWIDTH!
SPEED!
AND!
ONE!
DOO!
OH, NO!
CONVERSION LOSSES!
HEAT!
OR!
ZERO!
DAH!
At poolside — with the G Amphibious Singing Troupe
Down by the oooold mi!!!! streeammm....
Next time, I'm taking the baritone part...
Cashier
Say, NOW I remember you guys from LAST year!
You must be out of your scull!
S.S. WALT KELLY
FALLS AHEAD watch it!
Outdoors, the Snow Creature Contest was in full swing...
It's no use! You just can't DO rain sculpture...
Will you settle for an artistic arrangement of ICE CUBES?
A CRITIC REVIEWS THE JAM...
Only two pages. Hmm... not so much a white-out as a WASH-OUT!



My job.

and welcome to it

On the next page, you will see a reference to my unemployment. Please disregard it. It is one of the hazards of trying to get an early start on an APAzine that we live in a universe subject to change without notice.

I am now employed by a company that used to be called Plus Computer Technology. It was started by a businessman who wasn't happy with any of the accounting packages on the market. He spent most of a year writing the code at home, and gradually expanded to the point where the firm got bought by Wilson Jones, a manufacturer of binders and office supplies. The new name is Wilson Jone Business Computer Systems, but the old name is still very much in evidence.

The system that was finally settled on is made by IMS, Inc. It is a collection of S100 boards, with a Z80 processor, two dual sided, dual density floppy disk drives, 64k RAM, and (usually) a 5 megabyte winchester hard disk drive.

At the moment, however, the one on my desk is nothing more than an AMPEX terminal. Marketing needed it for a few days for a demonstration. Instead, I have a TRS-80 model 2, with hard disk drive, borrowed from the corporate controller for a few days. One customer has been having problems with a custom program that was written for him, and I've been given the task of fixing it.

Which bring us to the programs themselves. They are all written in Microsoft BASIC, with no comments, no documentation on the internals, and an average of 5 statements per line. Not at all structured, either. A true mess.

I've only been on the job for a week, having started the monday after Confusion. But so far it all seems fine. And maybe next month this zine will be word processed.

(A curious side note. Most of the programming staff appears to have been there for about 6 months. As far as I can tell, the change in ownership only occured 12 or 18 months ago. Things are happening swiftly, and they still seem to be hiring. Our current lease is up in July, but by then I get the impression that we'll be drowning in a sea of desks....)

Putting Two and Two Together-

I have often said that I have a terrible memory, but it would perhaps be more accurate to say that I have a terribly inconsistent memory.

For example:

When the recent talk of satellite interceptors broke out in the press, and all the discussion was of how the russians had been working on this for years and we had been caught standing still, I thought that various aspects of the discussion seemed familiar.

Back when I was a child in grade school, I used to spend a great deal of time reading the aviation and space section of our school library. One of the books there was called "Spacecraft and Missiles of the World, 1966", and it contained mention of a satellite interceptor from the 1960's.

According to this source, the project consisted of a number of augmented Thor missiles (the precursors of today's Delta satellite launchers) with nuclear warheads, based on Johnston Island in the Pacific ocean. President Johnson announced that it was operational in 1964, and it was believed to have photographed Cosmos and Voskhod vehicles during its development (which started in 1961). Despite the presidents statement, the entire project was viewed by the editors of the book as an R+D effort.

And I at least never heard another word about it...until I opened the latest issue of Science 83.

There, in the middle of an article on EMP, were the following statements.

> "For more than a decade, starting in the early 1960s, the Air Force kept a secret arsenal in the Pacific, armed with missiles tipped with nuclear warheads. The arsenal's sole mission was to destroy enemy satellites." "The system was scrapped in 1975...."

Of course, the whole reason for its being discontinued, and its being mentioned in the article is that officials finally realized that if used, it would knock out a great many more satellites (indiscriminately of which side they belonged to) with electromagnetic pulse than the target of its explosion.

Still, it's interesting to see what can be found with a poor memory, a peripheral mention and an old book.

Mystery Ad-

As most of you know, I am currently unemployed. As you might guess, this means I spend time going through the help wanted classifieds of the local papers. Normally, this is a rather boring pastime, involving scanning a page or so of ads, and circling the ones that seem to apply even remotely to anything I've done.

But recently, I ran across one that took a few minutes extra. Here it is:

Data Processing
Programmers
PUSH, POP, DEC(X)
If you use these for 8080, Z80 in
the CP/M_-CP/M 86 environment,

CD 03B9-1FACH
ETX

Now, look at that for a little while before switching your attention to the next page. What is it saying?

Mystery Ad (Cont.)-

After several needlessly complicated attempts to interpret the ad as a set of ascii codes, or a hexadecimal subtraction problem, I finally recalled that CD was hex for the 8080 Call instruction. It thus followed that the rest of the digits were a phone number. The "ETX" at the end was an ascii control code for end of transmission. The outfit turned out to be a small software house in Lombard Illinois, dealing with Xerox micros, and looking for someone to solve a rather esoteric and specific problem in an area I had little experience. I left them a copy of some of my assembler coding, and never heard from them again.

Shortly thereafter was when I finally heard from a recruiter that Kurt Sakaeda had recommended to me, and who had interviewed me for a statistics position. My stat background is very shaky, and I didn't get the job. But she said that she had a microcomputer software firm coming off a hiring freeze shortly, and would call me. She did, and that is how I got my job.

Well, that's about it for this time. Oops! Almost forgot....

Mailing Comments-

Rod Smith-I like the Peter Wimsey stories, too. My favorites are probably Murder must advertise, and Strong Poison. Despite the fact that the murder could not have been done the way it was described in the latter, I still think of it as a good book.

Cap'n Al-Word processing time travel is not the least of the reasons I am thinking of devoting my first few paycheck to upgrading my old SOL. I may be able to do some word processing at work, but I really feel the need for the ability to start on an essay, and go away and pick it up again later, without having to leave the paper in my typewriter. ANd I wouldn't have the ability to work on my own hours on it at work.

(It is a little frightening to think that my machine is based on what some would claim is the trailing edge of 'in-use' technology in microprocessors....)

Fannish databases? I'll probavly make use of one, and would be willing to assist in whatever way possible. But long distance charges to Massachusetts must act as something of a deterrent for some people.

Perhaps if you were to program your micro to pick up net mail twice a day, or so. And process it and ship it back out?

As for a protocol, I seem to remember sitting around with Alex, Mike and Jeff at a Confusion a few years ago, hashing that question around. I think Bentley is still working on it, and may have something sometime soon.

I am beginning to think of hardware and software as becoming less and less distinguished from each other, at least as far as machine architecture is concerned. Microprogramming, Operating systems in silicon, object based machines, and gate arrays and their successors seem to be blurring the lines.

The dentist chairs sound interesting. Can you say any more? I always wanted to take the framework from a dentist's drill and instrument it to input arm position, elbow angle, and other necessary information for real movement games. But then you end up needing an omnidirectional tread mill for the leg work....

Motown on the Rocks-British Museum, indeed! I have no storage problem with my belt pouch since I folded everything so that the spins matched. Now all I have is an retrieval problem, as it seems I also folded the index....

Mailing Comments (cont.)-

Leininger-Blast it! I had to write the closing question in my zine twice, and the second time I botched it. What I meant to say was: Could a culture devise an accurate orrery, without anything more than simple bookkeeping math, and generation of trial and error?

Rolf-Your interview has interesting echos of The Door into Summer. ADRG sounds like it would be a nice place to work. Are they hiring overage teenage software wizards? (Actually, I usually just figure that in a few years we'll all be working for Corrigan....)

Munchkin woodworking and furniture also sounds interesting. How seriously is it contemplated?

(And wasn't Hans Berliner working on a bridge program some years back?)

Donna- Florite is, if my memory serves me correctly, the state mineral of Illinois. All the higher grade tourist traps seem to stock it. I'll try to remember to look it up for you.

Proposal #1, I can't say much about.

Proposal #2, however, would seem to me ill advised and needlessly inflexible. It seems to me that this would only promote needless strife, and makes no allowances for circumstances beyond the control of the editor. While I, too, dislike the delays (despite being inarguably involved in some of them), such demands carry little wait without a valid threat to back them up. When last it was discussed, it seems to me I remember no one who was eager and fully willing to shoulder the burdens of APA-Tech.

Frambach-This seems to have been a good season for finding work. With the situation in Michigan being what I seem to hear that it is, I wish you luck, and am not surprised by the plant closures. But as long as there are administrative offices in Michigan, you should do alright. Thanks for the film tip. I may find myself with that problem one day.

That's IT! It's DONE! On to the next one....

This has been a production
of The Imaginary Press, Ltd.
(15 S. Maple Lane,
Prospect Heights,
Illinois 60070
(312)-398-7742)
which is wholly irresponsible.

THE Quintessential Singularity 22

10 February 1983 for APA-TECH 23

being a journal of complex, imaginary, and irrational studies
produced at Rolf'n'Mary's place in Champaign, Illinois
made possible through a grant from the Center for Spaced Research
RR 1, Box 390, Apt. 5, Hamburg, New Jersey 07419 (201)-827-6111
Gregory Ruffa, Director and Westar Pit Boss

The current cover, featuring the Green Wizard, is a commission from Dave Levine.

* * *

Here it is St. Valentine's Day and I'm down in Chambana getting ready to give my talk and help with Trivia on Saturday and working with Rolf to prepare starflight for the small screen (it looks like we're finally going to make it, folks!). I got in to Chicago on the 10th for Thursdaynight, spent the weekend noodling around at Bill-Aytch's, and got to visit with a lot of people at Paul Gadzikowski's Late Early Alan Alda's Birthday Party. (I carefully avoided the "swamp juice," which is why I alone survived to tell thee...)

ChUSFA will be conducting the Trivia Bowl at Constellation; it will be a sixteen-team-maximum single-elimination contest with questions arranged in Jeopardy-style. I'll be spending some time this week doing a bit to write questions. With luck, we won't be sorting things out the Thursday night of the convention.

I received a letter from Mike Jittlov after the holidays. It appears that he'll be getting his Big Break at last! He has recently done an introduction for the new Disney Channel on cable, featuring "the first Mickey Mouse satellite" with "little wizards working in the eye-ports," and a promotional piece for EPCOT. What all this led up to has caused him to set aside work on his short film, "The Wizard of Hollywood." Disney is apparently going to run a Twilight Zone-like series and has asked Mike to do a one-hour-long episode entirely as he wishes, over which he retains creative control and broadcasting rights. Eventually, this work is also likely to appear on free television. Stay tuned...

* * *

A good book dealing in the history of science which I've read recently is Emilio Segré's From X-rays to Quarks. Segre was personally involved in nuclear research and knew many of the key figures in the physics community well. His history starts from 1895, a banner year for physics. Segré deals with the history of non-scientific events as well, which helps put the physics in perspective. His style is often anecdotal and quite readable.

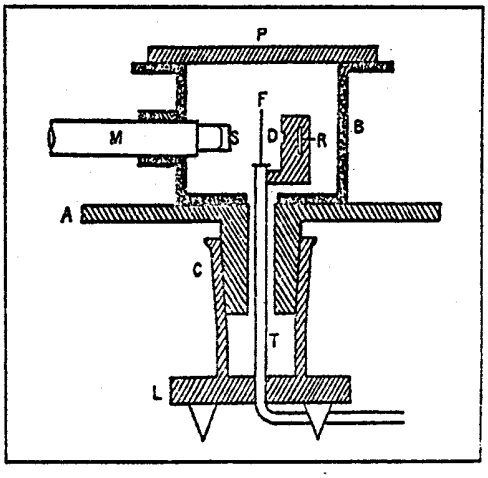


Figure 6.3 The apparatus used by H. Geiger and E. Marsden for studying the scattering of alpha particles. R is the alpha particle source, enclosed in a lead holder within the vacuum container B. A fine beam of alpha particles passes through the slit and strikes a thin metal strip, F. The alpha particles that pass through the strip strike the fluorescent screen S and are observed through the microscope M, which, with B, can be moved around TF. [From *Philosophical Magazine 25*, 604 (1913).]

It must be a good book - it has a SPINTHAIRISCOPE!



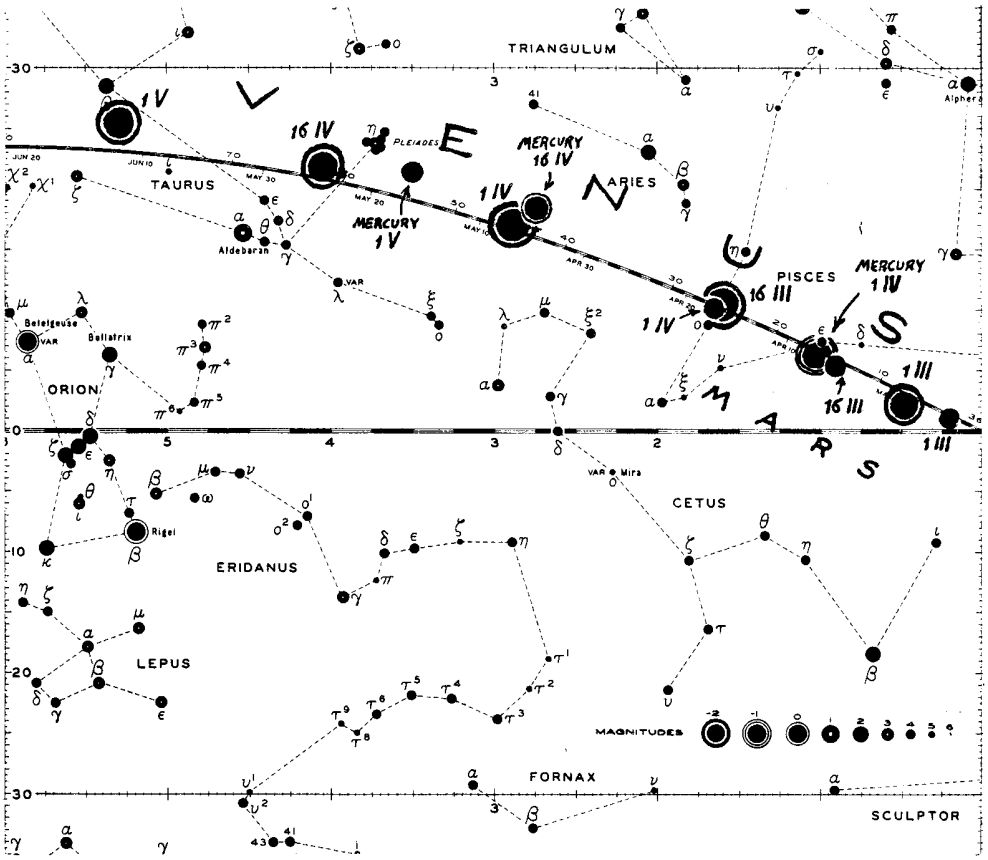
I can't say I've been too impressed with Niven's recent collaborations: the books seem to have ideas which are more interesting than the stories. Dream Park offers an application of what I think will be an important direction for computer science and holography (though I would guess we could do most of that much sooner that 2051). The plot is well-paced and reads pretty well as a D&D story. However, as a mystery novel it is only so-so and is not particularly "fair"; while there are some clues that might allow one to deduce the identities of the criminals, their motives lie entirely outside the domain of the story and must be explained in a long "drawing room" scene. Oath of Fealty does a much weaker job of exploring the implications of its ideas, such as arcologies or direct human-computer interfaces ("implants"). What this book is essentially about is the "siege mentality"; in that regard, it seems to be largely modeled after The Moon is a Harsh Mistress. The thinking shows much of the usual Heinleinesque disregard for ethical niceities. While I am aware that the authors have publicly stated that their views do not necessarily coincide with those of their characters, it is still difficult to excuse some of the weaknesses in the plotting. First, one is not going to demonstrate a position of moral superiority by resorting to methods as underhanded as those of one's opponents (such as by executing a "jailbreak"). Secondly, it seems hard to argue that methods invented under pressure for dealing with intruders could not have been incorporated into the arcology's original design, when more time was available for planning. It could be said that all of this is an allegory illustrating a society's transition to a more humane form of justice, but I think it is difficult to make a case for this intention on the available evidence. I feel the authors would have done well to take more time and develop some of the ideas more thoroughly, even at the risk of producing a longer book; the last third of the existing story feels very rushed and superficial. The running catch-phrase throughout the book could well become one of the great new cop-out lines of the coming decades. It is a slogan I find very disturbing and rather unpleasant to examine very closely.

Reading these two novels back-to-back reinforced a couple of impressions I'd been forming. One is that Pournelle has been a bad influence of Niven's writing. Niven's work up to around 1975 was generally upbeat and full of colorful characters and interesting implications of various concepts. Together, Niven and Pournelle seems to have developed a nice "best-seller" formula dealing with pretty ordinary sorts of people, such as businessmen and bureaucrats. That may be a more realistic approach to a story, but I don't feel the aims of fiction are served as well. If I want to meet everyday people, I can get up in the morning and go to work. Has anyone else noticed that their characters tend to use exactly the same slang or colloquialisms and order the same drinks in a given story? If I never see the words "rent-a-cop" or "Navy grog" again, I will die happy...

* * *

The next computer revolution will be a boon to us all. It's the one which lets the computer ask, "Are you sure you want to do that?" The one after that is the one that gets us in trouble. That's the one that lets the computer ask, "Am I sure I want to do that?"

* * *



THE PLANETS -- 1 MARCH TO 1 MAY

Mercury becomes visible early in April and reaches greatest eastward elongation on the 21st. During the last half of the month, the planet will be about 15° above the western horizon at sunset.

Venus continues to pull away from the Sun. It remains the brightest object in the night sky, after the Moon. It will be quite prominent, standing high in the southwest to west at sunset, itself setting some three hours after the Sun.

Mars drops gradually closer to the western horizon with each sunset, fading in brightness and eventually become lost in the twilight by mid-April. Mercury will pass about a degree-and-a-half north of Mars on April 9th.

Jupiter and Saturn will be found at about the same places throughout this interval (see the map in QS 21). Jupiter rises before midnight and is quite bright and visible during the entire night. Saturn rises by mid-evening or earlier; it will be only fairly bright and will have set by sunrise.

* * *

I guess, with six months of issues to reply to, some of the things I was going to say have gone stale, so I will depart from my standard procedure until I get closer to the present. As always, that I have not written a comment on a particular contribution does not imply that I've not read it...

APA-TECH #20 --

INTO THE IC WATERS: Cap'n, you really must write me some mailing comments some time...

LONG, CABBY 'ZINE: My, I certainly was in a cartoony mood that week. Shuffling satellites must have caused something to snap...

The episode of The Twilight Zone featuring Robert Redford was "Nothing in the Dark"; he played the Angel of Death disguised as a policeman. ("Are you sure you're not an encyclopedia salesman?")

DISGUSTING MIXED DRINK: We probably number among the last Americans who could grow up without dealing with computers. I had a couple of peculiar opportunities to learn about them things starting back in 1967, so I have now been programming for more than half my life...

I have a question I've been wondering about since I first learned of monopoles. A solitary charged particle, such as an electron, is surrounded by circular magnetic field lines at its equator; a magnetic monopole has circular electric field lines there. If you made a two-particle system of them, each body would accelerate along the field lines of the other. What would be the steady-state condition of an electron-monopole pair? (I should think it would be radiating like crazy!) 10^{25} electron-volts, eh? I like a fundamental particle I can use as a paper-weight!

Sad as it is, I think the age of cheap science pretty much ended about fifty to seventy years ago, when someone with a private fortune could still make significant contributions. After the first three hundred years, systematic Western science probably did just about all the "easy" stuff. Science now needs the reach that large-scale experiments provide; unfortunately, only institutions such as governments have that kind of money...

Yes, Saline, Michigan is where the Old Salts retire to: they are responsible for the town song, "Saline, Saline, over the bounding main..."

SMITH'S INCANDESCENT PLASMA: I'm sorry that you do not like my mutated 'zine titles; they are such fun to do, though. I tended to believe that folks read the mailing comments with the original APA handy (I need to...). Perhaps I will start adding parenthetical initials when I'm being obscure...

That's Satcom 3-R, "R" for "Replacement," that is *chuckle*. Now watch, Westar-VI will wind up on Ascension Island (or "Whaddaya mean, Ariane-3 is geostationary under two miles of water?"). RCA has a real space race going with us: they're launching Satcoms-6 and -7 this year!

The diffraction grating moon was cute! But isn't it downside-up? Or perhaps it's a telescopic view...

PONICHIELLI PANDEMONIUM: It's strange to sit here in your apartment and read again about your wedding back in May; I'm glad all is working out well. I remember coming out of the church, seeing the "getaway car," and thinking "Hot-cha, a Mercedes!!" It's hard to beat good German iron...

Since you wrote this, I note that ChUSFA is now up to over 9000 items (same little bitty room, though...). John Nine sure has been busy. It's not every library that has stacks eleven feet high! You've attained ¼-MITSFS-size in one-quarter of its history: that means you'll have 37,000 volumes by 1997 (same little bitty room, though...).

A start on APA-TECH #21:

THE COVER: On my frequent travels around New Jersey, I have sometimes found myself sharing the road with large white trucks with big red diamonds on the rear doors containing the letters "A·P·A". The first time I saw one, I thought to myself, "Someone has a fantastic distribution system!" I envisioned such a truck pulling up to your residence and someone in a crisp white uniform, with that red diamond on the breast pocket, handing you your 'zine personally and having you sign the clipboard. I saw enough of these trucks to come to believe that they might be all over the place. It turns out that the APA Trucking Company operates out of North Bergen, New Jersey, so this is probably a bit of local humor...

* * *

It looks like there will have to be a further supplement later this month: I still have a heap of replies to write, but there just hasn't been enough time this week. Rolf and I have devoted a goodly portion of every night this week to STAR FLIGHT: THE SLIDE SEQUENCE. The 16-mm camera and the VAX aren't on speaking terms yet (perhaps they haven't been properly introduced...), so we used the graphic recorder with a 35-mm still camera. There was a serious setback when the VAX crashed and wiped out three days of Rolf's work. But we finally got a roll of Ektachrome-160 shot last night; if the developing goes all right today (17 II), we will present a quick show at Capricon.



I made a graph of cost versus distance for the hotels in Baltimore and concluded that my first four choices are the Holiday Inn downtown, the Howard House, the Hilton, and then the Hyatt (some of my roomies ain't wealthy!). We'll see how it goes -- I have a bad feeling about this convention already...

We've been spending much time preparing the Trivia Bowl for Baltimore. I believe it will be one of the more interesting contests offered at recents Worldcon. We and the audience will have such fun! (As for the contestants...)

See (many of) you in Chicago! Cheer-o!

THIRD TIME'S A CHARM

Being the much-belated return to the pages of Apatech of the once-and-future physics doctoral student KEITH THORNE, who now hails (and snows and sleets and . . .) from that dear little burg of the northern climes, Minneapolis. As for the how and why, more on that later. Since I have been terribly unfannish of late, I did not send out a COA, so here are my addresses, such as they are.

Home: 632 N.E. Adams St. Apt. 2 Phone: (612) 623-4855
Minneapolis, Minnesota 55413

Office: Physics Department, University of Minnesota
Minneapolis, Minnesota 55455
alas, no office phone.

So much to say, and so little time and corflu. But first a batch of necessary self-abasement. I hereby prostrate myself before the great god Ghu, and the shrines of G.T. Buckfast and Shalmanesser, to apologize for my extended gafiation since, and it pains me even now to admit it, Apatech 18. I can offer no rationalizations, and thus rely on the forgiveness of the court. Now to return to earning my keep. It seems best to at this point to offer up a condensed version of the past year, and then go back tosome of the more interesting episodes.

A BRIEF SYNOPSIS

When last seen in these pages I had just revealed to the masses that I had been accepted for graduate school in physics in the fall quarter of 1982. I was at that point (Winter,1982) still very gainfully employed at Hughes Aircraft in Los Angeles. In April, I attended Minicon and visited the university, deciding then to seal my fate. Later in the month Iplayed host and tour guide to two denizens of the Midwest who were visiting the West Coast. I suffered, well actually enjoyed myself during my last California summer. I went cross-country by air to my sister8s very pretty wedding in July. August was the month of the big move. I decided to keep my belongings and hire a moving company to transport them, which was actually cheaper than renting a truck. This allowed me to take an extremely enjoyable six-day journey across the continent, stopping at the national parks along the way. Managed to get an apartment in less than a week, in time for the arrival of the moving van. This put a real crimp in my Chicon attendance, unfortunately. I spent a couple of weeks resting and explor- my new home before school started in late September. I felt a lot of deja vu the next few weeks as the experience of being a first-year graduate student echoed my previous attempt of four years before. I met many new and interesting people. The maelstrom of classes, teaching duties, homework and house-

hold chores kept me very busy, much more than I had been in quite sometime. I drove home to Michigan for short breaks both at Thanksgiving and Christmas. Those who saw me then heard me muttering about "the qual". This was in reference to the written qualifying examination in early January, which I had to pass to continue on for my doctorate in that department. It was this same sort of exam which had thwarted me twice while I was in Urbana-Champaign which had forced me to leave the University of Illinois in 1980 with only a master's degree. I sweated through December, arriving back in town after Christmas at the height of a blizzard which left 18 inches of snow in one evening. I was also forced to skip Ishercon. After the exam, there was the inevitable waiting period. So to now end the suspense, may we have the envelope please. And the decision is . . .
* * * I PASSED, I PASSED! HURRAH, HURRAH! I MADE IT! * * * Finally, some affirmation that maybe I made the right decision. This quarter is again very busy, but I am at least going to Capricon to take a well-deserved break.

WHERE DO I GO FROM HERE?

Now that my doctoral quest is assured, I can concentrate on my research. After this school year I will essentially have completed all of my coursework. This includes my minor in astronomy and astrophysics which I have begun here at Minnesota. (By the way, Greg (Ruffa), the 1983 AAS meeting in June is here in the Twin Cities.) My field of concentration will be , surprise, surprise, experimental high energy physics. After checking out the schedules and possibilities of all the efforts here in the department, it seems pretty certain that I will be working on an experiment at Fermilab. (again) This would be #621 on the Proton beam line. It is slated for early 1984, and is dependent on the new Tevatron accelerator. This schedule means that this summer, and fall will be partly spent living there. No details as of yet. The group itself is very small as such efforts go - only four professors, a couple post-docs, and two thesis students from Minnesota, Michigan and Rutgers. With luck I will be done before I turn 30, (horrors of horrors) As for fandom, I feel myself drawing away from it more and more, as if I am out-growing my "need" for it, and am instead concentrating on making things happen where I live. This might change, however.

Marvin / By Tom Armstrong



A DESERT SPECTACLE

Here I was living in California and I had still not gone to see a shuttle landing. As it was May,1982, I would not be here much longer and so I discussed making plans with Jamie and Gail Hanrahan. The next one was slated for the Fourth of July weekend. As the time approached we almost forgot about it, however. So a week or so before the event Gail called up the NASA Dryden Center. .She explained that she was an employee of TRW and wondered if she could get a "special guest" pass, as she had heard had been given in the past. Incredibly, the official said "Sure!" and took down her name and told her where she could pick it up. Thus, we were the proud owners of a pass which would enable us to park right up close, as opposed to being stuck five miles or more away across the runway where most people were. On the day we headed out there very early into the Mojave Desert and Edwards Air Force Base. We ended up not only parking on a slope right behind the facility, thus affording excellent visibility, but were also able to hike down to the Visitor's Center and to join, if we wished, the throng of spectators surrounding the podium from which Ronnie-baby was to give his speech. The NASA store was packed, but we managed to pickup a few baubles and trinkets. We thence retired to our parking area to await the landing. Loudspeakers on tall poles broad cast the play-by-play. For a long time nothing, and then a sharp "crack,crack" as the sonic boom ran over us. The most impressive sight was the rippling of the high cirrus clouds overhead by the shock waves. Almost immediately it was into its approach, and we watched and our shutters clicked as it glided down the runway across our field of view. The crowd cheered and cheered. Even this jaded reporter felt a twinge upon seeing the thing for real. We then hiked down again to if not to hear the Prez, to at least get a gander at the gutted Enterprise, which was to form the backdrop for the podium. The lines were long as we all tried to file through the metal detectors, which were dropping like flies in the desert sun, as the cool morning was turning to hot midday. Several groups were there, and people were practically shoving these little American flags at us to wave during the speech. We looked at the Enterprise, which looked forlornly on the apron missing its engines. We decided to skip the speech crowd, and returned to the car. Reagun timed his speech (which was a pretty empty, pointless one) to the take-off of the piggybacked Challenger. For this one we had ringside seats, for after it tookoff it circled the field and flew over the podium, which put it in a direct line over us on the hill. It was very grand as it slowly banked by us, And I managed to get a great picture of it and a chase plane. Well worth the price of admission, which wasn't. On leaving the site, we were also lucky to be diverted away from the traffic jam of some estimated 500,000 souls who had formed the glinting line of RV's and such that we could just barely make out across the desert floor from where we had parked. Now I just have to get to a Shuttle liftoff in Florida to make it complete.

MY SUMMER VACATION

My last week in LA was very hectic. At my farewell luncheon I got nearly soused on one or two margaritas, while the stress I was suppressing manifested itself in strange inflammations on my palms. I finished packing Wednesday night, while Thursday saw the movers take it all away in a record 45 minutes flat. Friday night I picked up my travelling companion (Bonnie Jones) and bid farewell to my high-paying job. Saturday morning I scurried around trying to clean up my apartment with various cleaners, which did no good for Bonnie's sinuses. We packed the car to the gills and enjoyed a last meal at Forty Carrots as the sun set into the smog. Then it was time to hit the road. I left this late to hoefully cross the desert in the dark of night, and thus arrive at Zion Nat'l Park at first light. The cooler was full, the tape deck on, and we headed out on across the land. We got to Baker, California near midnight. I'll never forget pitch-black darkness and still over 90 degrees! I tried to doze off, as Bonnie took the wheel for the first time. I was awakened as we past Arizona into Utah. We stopped for breakfast and caffeine in St. Georges. Now Bonnie went to sleep as I drove througha peaceful desert sunrise withsome harpsichord music on. I felt very contented. We arrived at the gate 15 min. before it opened and dozed in the car before being rousted by the park guard. We made camp and proceeded to try to rest in the soon stifling heat. That afternoon and evening we explored the park. We climbed up to the pools and took a plunge in the cold waters of the uppermost pool. Lots of sightseeing of canyons such as I had not seen before. That night we slept, recuperating and readying for tomorrow's trek. Monday found us driving northeast across Utah, where we found a desert rainstorm. We drove past Salt Lake City and through Logan, after getting lost a bit. We left the interstate as we gained altitude, crossing our first mountain pass at 6-7000 feet. The scenery was spectacular but only a prelude to what was to come. We drove on, heading north through a corner of Idaho as we headed towards the Tetons. It was running late, though, so we opted out for a motel in the little town of Afton, Wyoming, about a hour's drive south of Jackson. We ate dinner it a local restaurant, having made a pact that this trip we would try to avoid any chains. On Tuesday morning we rose and headed for Jackson, where we had another soon to be routine large breakfast, which was all right as we were only having about two meals a day anyway. From their we headed north into Grand Tetons National Park. Regrettably, time permitted us only a leisurely drive through the park which featured a long range of sharp-peaked alpine mountains, some with glaciers. This is very untypical of the rest of the Rockies, which are blocky uplift mountains. We bid a sad farewell as we headed noth again towards the nearly adjacent Yellowstone National Park. We got in, procured a map and decided to camp at Bridge Bay(?) campsite, which was still open to tents, as the camp was having a problem with nocturnal bear visitations. So we drove in and set up camp. It was now mid-afternoon and we had only the rest of that day to see the park. Thus began our whirlwind tour of Yellowstone(To be continued . . .)